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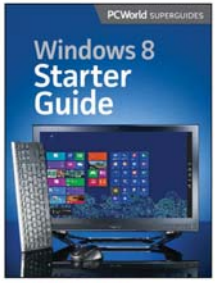

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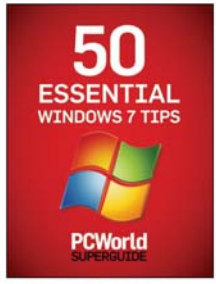

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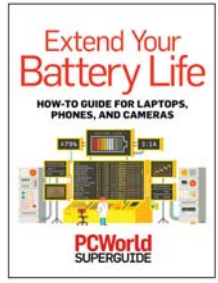

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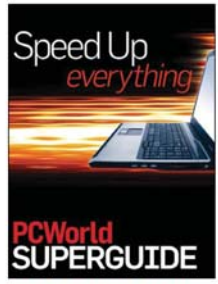

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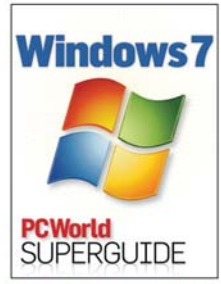

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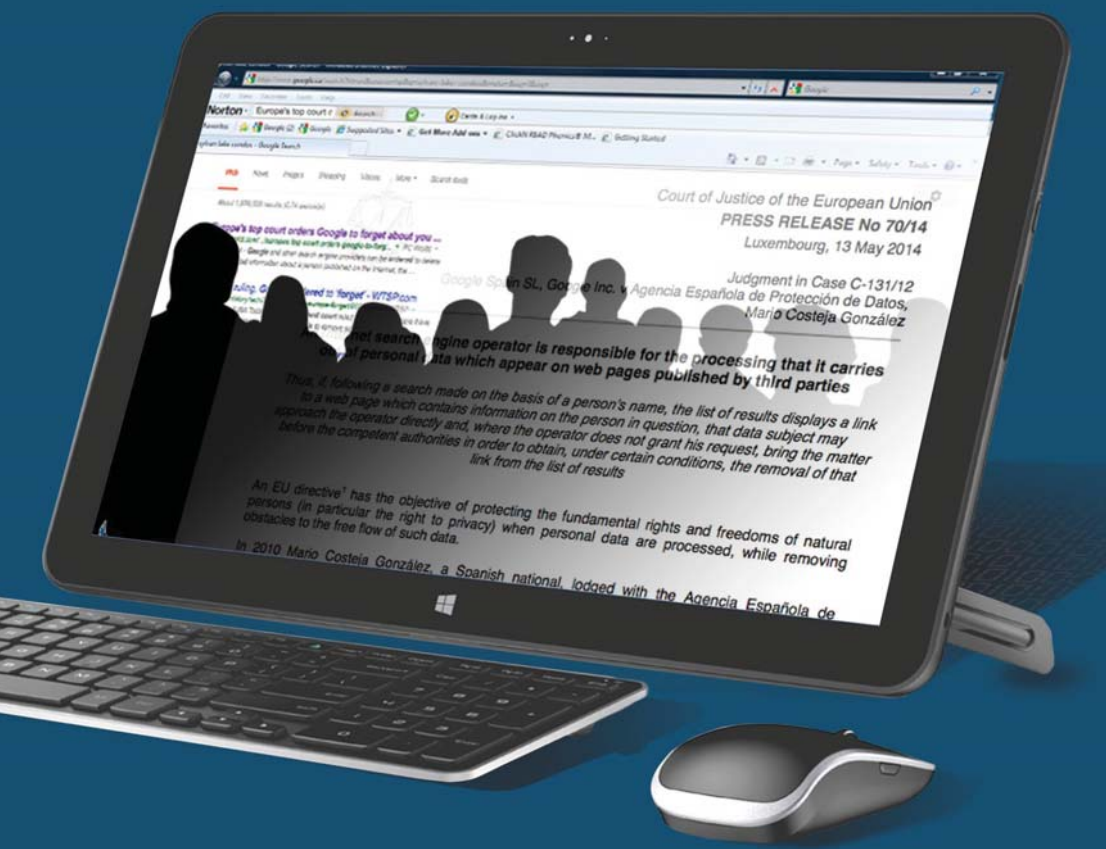
The challenges of scrubbing Web history

Writing to European regulators, Google details how some people are twisting the facts when asking to be 'forgotten.' **BY ZACH MINERS**


Court of Justice of the European Union
PRESS RELEASE No 70/14
Luxembourg, 13 May 2014
Judgment in Case C-131/12
Agencia Española de Protección de Datos,
Mario Costeja González
operator is responsible for the processing that it carries
which appear on web pages published by third parties
search made on the basis of a person's name, the list of results displays a link
to a web page which contains information on the person in question, that data subject may
approach the operator directly and, where the operator does not grant his request, bring the matter
before the competent authorities in order to obtain, under certain conditions, the removal of that
link from the list of results
An EU directive has the objective of protecting the fundamental rights and freedoms of natural
persons (in particular the right to privacy) when personal data are processed, while removing
obstacles to the free flow of such data.
In 2010 Mario Costeja González, a Spanish national, lodged with the Agencia Española de

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July 31, 2014

Isabelle Falque-Pierrotin
Chair, Article 29 Working Party

Dear Ms Falque-Pierrotin,

Thank you for inviting Google representatives to the meeting organized on July 24 by the Article 29 Working Party with three US-based search engines to discuss the challenges of

We also know some tough debates lie ahead. We think it is important to have those debates openly and respectfully. We look forward to working with the Article 29 Working Party, as we confront the many difficult challenges posed by the *Costeja* decision.

SOME OF THOSE people seeking to scrub their histories from the Web under Europe's recently implemented "right to be forgotten" rule are being economical with the truth when making their requests, Google says.

In a July 31 letter to European data regulators (go.pcworld.com/forgotten), Google lists some of the challenges it faces in complying with the ruling, which allows individuals to compel search engines such as Google and Bing to remove links to pages that mention their name if the references are "inadequate," "irrelevant," or "excessive."

In its letter to regulators, Google expresses its concerns about the ruling.

Unreliable information

Part of the problem is that in deciding whether to grant or reject a request, Google must often rely on information the requester submits.

"Some requests turn out to have been made with false and

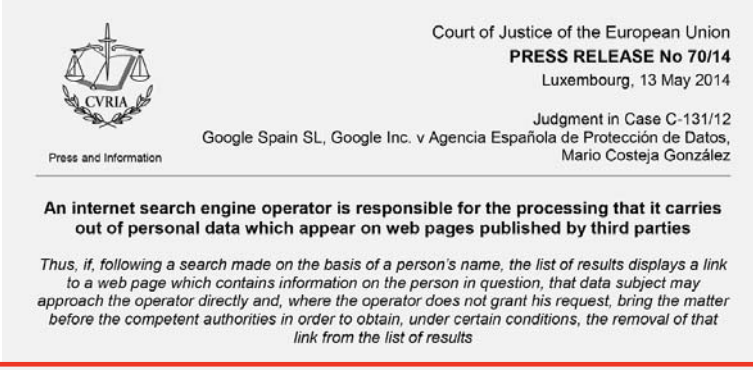
inaccurate information," Google says in the letter. "Even if requesters provide us with accurate information, they understandably may avoid presenting facts that are not in their favour."

For example, the company says, someone might ask to remove an old article about crimes they committed as a teenager—without revealing that they had been convicted of similar crimes as an adult. Consequently, Google might not be aware of information that would support leaving the search result intact.

Google has criticized the ruling in the past but says that it's working to comply with the law nonetheless. Its late-July letter was in response to a questionnaire from regulators seeking more details about how it handles the requests.

Thousands of requests

As of July 18, Google had received more than 91,000 requests involving more than 328,000 URLs. In the July 31 letter, the company acknowledges removing around 53 percent of those URLs, declining



Court of Justice of the European Union
PRESS RELEASE No 70/14
Luxembourg, 13 May 2014

Press and Information

Judgment in Case C-131/12
Google Spain SL, Google Inc. v Agencia Española de Protección de Datos, Mario Costeja González

An internet search engine operator is responsible for the processing that it carries out of personal data which appear on web pages published by third parties

Thus, if, following a search made on the basis of a person's name, the list of results displays a link to a web page which contains information on the person in question, that data subject may approach the operator directly and, where the operator does not grant his request, bring the matter before the competent authorities in order to obtain, under certain conditions, the removal of that link from the list of results

The ruling makes specific demands on search engine operators.

So far as concerns, next, the extent of the responsibility of the operator of the search engine, the Court holds that the operator is, in certain circumstances, obliged to remove links to web pages that are published by third parties and contain information relating to a person from the list of results displayed following a search made on the basis of that person's name. The Court makes it clear that such an obligation may also exist in a case where that name or information is not erased beforehand or simultaneously from those web pages, and even, as the case may be, when its publication in itself on those pages is lawful.

to remove about a third of them, and requesting more information in 15 percent of cases. It goes on to say that those percentages could shift over time.

Reasons Google might not grant a request include situations in which removing the link would not be in the public interest, or if the contents of a link involve political speech, it says.

As of July 18, Google had received more than 91,000 requests to remove URLs.

As of the July 31 letter, people in France and Germany had submitted the most requests, at 17,500 and 16,500, respectively, followed by the United Kingdom with 12,000 requests, Spain with 8000, Italy with 7500, and Holland with 5500.

Some webmasters have complained to Google about the removal of links to their sites, the company says.

Other parties besides Google have criticized the ruling. In late July a UK House of Lords subcommittee said the ruling was unworkable and misguided, and that it could be particularly damaging for smaller search engines that don't have the resources to handle such requests.

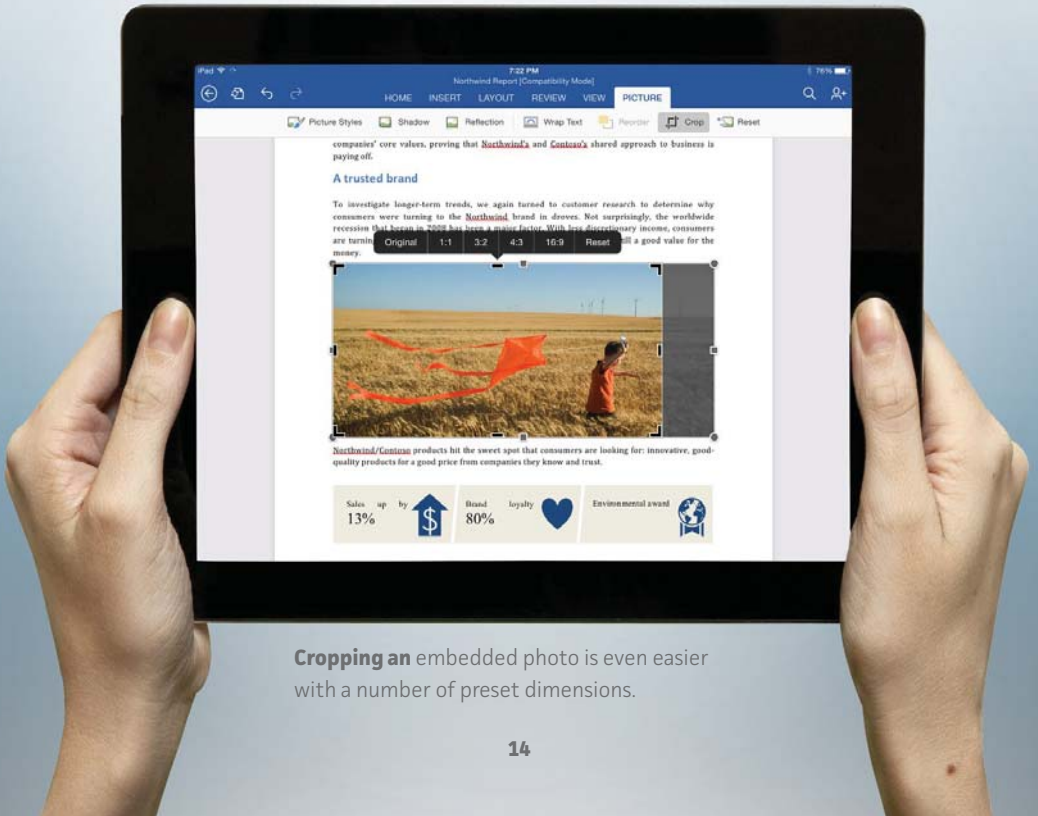
Google provides a form online for removal requests. So does Microsoft's Bing. "We continue to work out the details of the process we'll use to evaluate the requests," a Microsoft spokesperson says.

Office for iPad gains PDF export, flick gestures

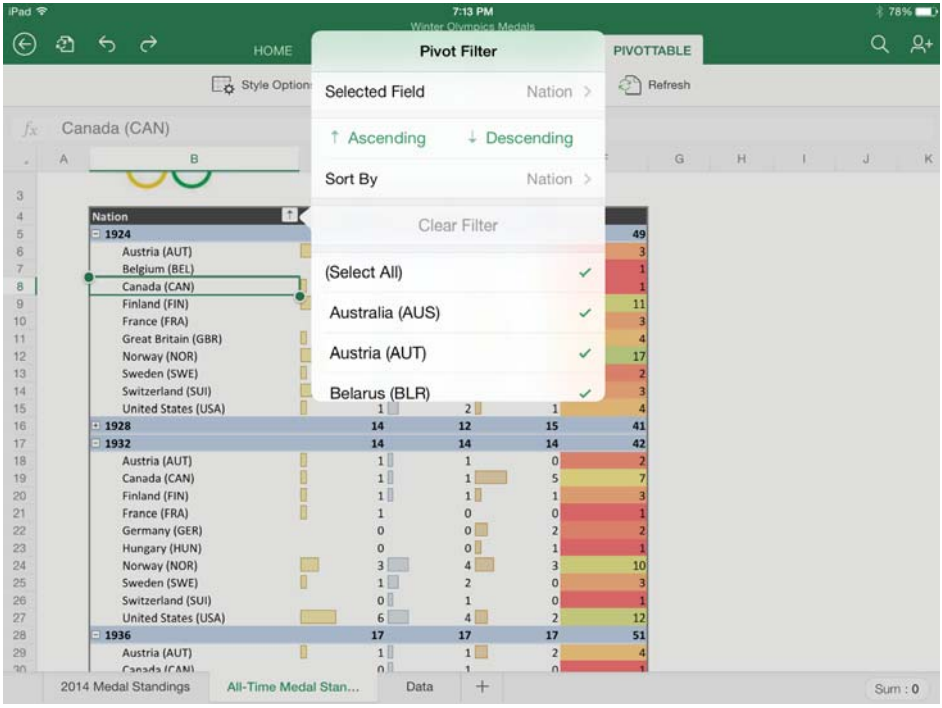
BY MARK HACHMAN

IN LATE JULY, Microsoft updated its three Office for iPad apps—Word, Excel, and PowerPoint—with new features, including PDF export, presentation views, and a new flick gesture.

The three apps are now upgraded to version 1.1 in the Apple App Store. Microsoft announced Office for iPad in March, and the elegant port of the office suite has so far received (mostly) glowing reviews. "Millions" have downloaded the apps, according to a blog



Cropping an embedded photo is even easier with a number of preset dimensions.



post (go.pcworld.com/offipadblog) by Microsoft's Office team.

While Excel and PowerPoint each received their own unique updates, all three apps gained several common features, including the frequently requested ability to export documents as PDF files. In addition, you can manually crop photos and images in all three apps using a new crop tool that allows you to choose from a list of popular preset sizes or to create your own. (A reset button is included too.) Finally, Office for iPad now has the ability to import external fonts.

Improvements to PivotTables are a notable addition to Excel for iPad.

Excel: External keyboards enter the picture

As any data-entry specialist knows, an external keyboard can be essential to the task of crunching numbers. The new update adds support for such keyboards to the Excel app.

In addition, Excel can now interact with PivotTables that have source data in the same workbook, and it also boasts improved print options. The spreadsheet program has gained one nifty little gesture, too: When you "flick" from a cell containing data, you select all of the cells along that row or column, out through the next open cell. With this gesture available, you no longer have to pick and choose cells, or to navigate menu options.

PowerPoint's new Presentation Mode lets you view your notes on your tablet.

PowerPoint: Presentation Mode debuts

The most dramatic update to the PowerPoint app is the addition of Presentation Mode, which allows you to view your notes on your tablet while projecting the formal presentation on another screen. (Google's competing Chromebox for Meetings, coincidentally, added a similar feature the same week.) You can now enhance your presentations with background music or video. And according to Microsoft, the PowerPoint app's new eraser and pen settings make annotations even easier.

Microsoft has said previously that it's busy putting its services on as many platforms as possible. The updates to Office for iPad certainly help that cause.

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Now you can legally unlock your smartphone (thanks, Obama)

BY FLORENCE ION

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ON AUGUST 1, President Barack Obama signed into law (go.pcworld.com/whunlock) a bill that allows U.S. citizens to unlock their phones. That means you can take your mobile device, no matter which carrier subsidized it, and move it to a competing carrier.

In late July the U.S. House of Representatives passed the bipartisan bill, after approval by the Senate. Unlocking phones had become illegal in January 2013, when an exemption to the DMCA expired.

There is a bit of a catch, however: The Unlocking Consumer Choice and Wireless Competition Act, as it's called, is valid only through 2015. For now, it ensures that you have a choice in matters regarding your mobile device, as long as your phone is compatible with another carrier's network and you've complied with your previous contract. And if you don't fancy yourself as technologically savvy, the bill allows you to seek outside help.

The new law gives you the freedom to move your device to another carrier.

It has been a long journey to get to this point. About a year ago, the National Telecommunications and Information Administration filed a petition (go.pcworld.com/ntiafcc) urging the Federal Communications Commission to make a ruling that would require carriers to unlock phones and tablets at the customer's request. Although most carriers have been kind about unlocking devices, tools for consumers to unlock their own phones and tablets were illegal.

The Unlocking Consumer Choice and Wireless Competition Act is valid through 2015.

What are you waiting for? Go forth and be free! At least until this exemption expires, anyway.

Surface Pro 3 Core i3 and Core i7 now available

BY BRAD CHACOS

MORE THAN TWO and a half months after the Surface Pro 3's debut, all of its variants are finally available: Following the June 20 launch of the Core i5 versions, on August 1 the Core i3 and Core i7 editions of Microsoft's new laptop-replacing tablet hit the streets. Shipping notifications for preorders landed in inboxes soon afterward. You can waltz into a Microsoft Store to pick up one of the new models, too.

Beautiful display, good battery life

PCWorld Senior Editor Mark Hachman found a lot to like in the Core i5 version of the Surface Pro 3, awarding it 4 out of 5 stars in his review (go.pcworld.com/surpro3rev). In particular, he applauded the larger, gorgeous 12-inch display; the more ergonomic kickstand and Type Cover connection mechanism; and the battery life, which outdid that of previous Surface Pro generations. "With its latest tablet, Microsoft continues to home in on what buyers increasingly want: a spacious sheet of thin glass for work and play," he wrote.

The kickstand's 'friction hinge' allows it to support any angle up to 150 degrees.

The new versions should offer largely the same usability experience, though as the processors' naming scheme suggests, the Core i3 model should be less potent than the Core i5 models, while the two pricey Core i7 machines should offer higher performance. Here's how the pricing and configuration availability for the entire line looks now:

- Intel Core i3, 64GB storage, 4GB of RAM: $799
- Intel Core i5, 128GB storage, 4GB of RAM: $999
- Intel Core i5, 256GB storage, 8GB of RAM: $1299
- Intel Core i7, 256GB storage, 8GB of RAM: $1549
- Intel Core i7, 512GB storage, 8GB of RAM: $1949

You can find more nitty-gritty details about the tablet's components in "Surface Pro 3 by the Numbers" (go.pcworld.com/surpro3num).

The above prices are for the base tablet alone, though. The Surface Pro 3's Type Cover accessory is a must-have, and it'll set you back yet another $130. If you want to transform the laptop-tablet hybrid into a truly universal machine, Microsoft also offers a $200 docking station that, with the right accessories, can turn the tablet into an impromptu desktop, complete with multiple monitors and a discrete keyboard and mouse.

Windows Phone 8.1 Update hands-on: An insignificant upgrade

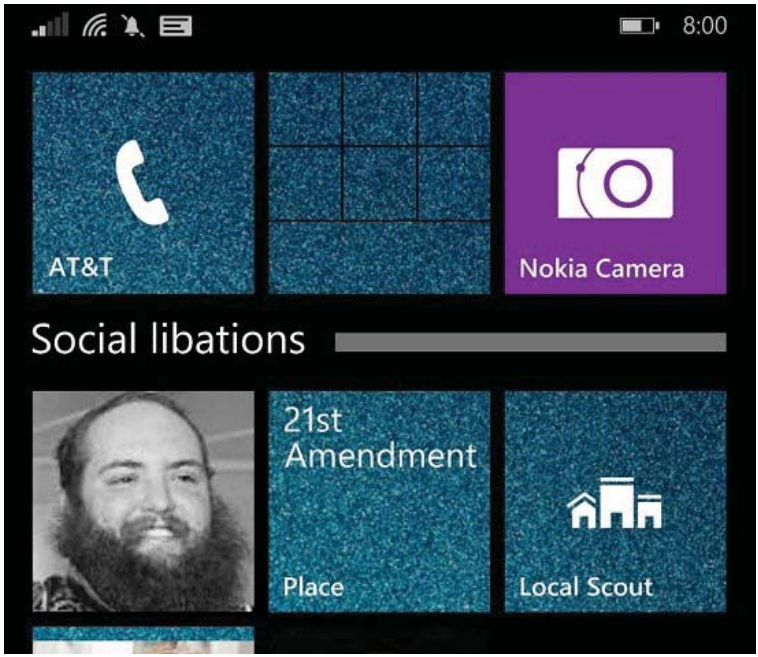
BY MARK HACHMAN

MICROSOFT'S WINDOWS PHONE 8.1 Update 1 started rolling out in early August, but don't get excited. Windows Phone 8.1 deserved a lot of attention, but I can't say the same for Update 1, which I tried on my Lumia 1520 phablet (the update wasn't available yet for our Nokia Icon test phone). It adds a nice feature or two, but nothing earth-shattering.

Download and installation took about 20 minutes or so, after which the OS reported itself as version 8.10.14147.180.

Update 1 consists of several minor tweaks. A couple of them, namely an updated Windows Phone Store tile and the new ability to forward and delete SMS messages in bulk, are simple additions that you'll quickly forget about. Others—the addition of folders and VPN support, an update to the Xbox Music app, and updates to the Cortana digital assistant—are worth exploring a little.

Unfortunately, the net effect of my brief period of playing with the update is that my Lumia 1520 feels a touch slower. And I hit a roadblock



An opened folder appears as a small icon at the top, with the contents grouped below.

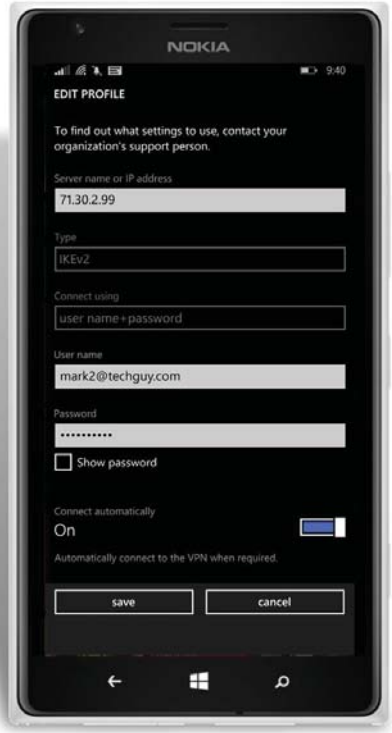
while testing the VPN capability, which was one of the features I most wanted to try.

Folders ahoy

Windows Phone 8 took a small step toward folders, introducing the ability to resize live tiles on the Start screen into small icons. With Windows Phone 8.1 Update 1, you can make those icons even smaller, and add a label to remind yourself of what's in there.

In a manner similar to working with folders on Android or iOS, you can now create folders in Windows Phone by dragging and dropping one tile over another. To close the folder, however, you need to tap the folder icon at the top of the Windows Phone screen, rather than just tapping anywhere else on the screen. That's different from Android's approach, and it feels a bit awkward.

It's also a bit time-intensive to drag, say, a contact out from People, pin it to the Start screen, and then drag the contact's name into a folder. But grouping pinned apps together takes just seconds.



The VPN configuration screen in Windows Phone 8.1 Update 1.

VPN support: For business only

Virtual private network support will prove useful for anyone who wants to access protected resources while on the go. This feature, however, is particularly designed for businesspeople or for consumers who have subscribed to a private VPN, not for casual users.

To use the VPN, you need to start in the Settings menu; Microsoft then directs you to the Store to download a compatible VPN app. (You have to search for the app manually.) Afterward, you get the option of encrypting all traffic to and from the phone. You can also turn the VPN on or off, or set it to trigger when you access certain domains or sites.

My first experience with the VPN function ended quickly. I tried

entering the IP address and password for our office VPN, but I wasn't able to connect. I'll be checking with our IT department, and you may have better luck if you do the same initially.

One nitpick: While editing an active VPN profile, I noticed that selecting the advanced options brings up a toggle labeled "Don't use VPNs on company Wi-Fi," with a default setting of Off. This double negative is needlessly confusing to users.

Improved Xbox Music, enhanced Cortana

I didn't notice a difference in the updated Xbox Music app—but then again, I don't subscribe to the service. It would be great if Xbox Music for Windows Phone let users play algorithmically generated "radio" stations.

Finally, there's Cortana, which Microsoft says has new natural-language capabilities. That's difficult to test, although a new "do an impression" request prompts Cortana (voiced by actress Jen Taylor) to run through a few famous lines. Microsoft has also adapted Cortana for the UK and China, among other regions. (At least on my phone, though, I can't ask Cortana to speak in an English accent yet.)

As for the performance drag on my Lumia 1520, that could be a matter of perception, and I might easily solve my VPN problems with help. Your mileage with Windows Phone 8.1 Update 1 may vary. In any case, there's little reason not to upgrade. Just don't expect much.

Do an impression, Cortana.

HTC M8 Windows Phone appears on Verizon's site

AN IMAGE OF an HTC One M8 running the Windows Phone operating system is currently on the Verizon Wireless site, providing compelling evidence that the company plans to sell the phone.

The URL of the image on the Verizon site identifies the hardware as the "HTC M8 Windows" phone.

HTC is slated to hold a media event in New York shortly before you read this, and rumors are indicating that the company plans to unveil a Windows Phone 8.1–powered version of its HTC One M8, one of the best-regarded Android phones released this year. The Verizon image appears to be proof that the handset will in fact come to market.

Apparently the HTC Windows Phone is a rebadging of the Android-powered One M8, and it will be running Windows Phone 8.1 Update 1. The mobile OS update supports Voice over LTE for improved clarity, a feature that the M8 for Windows will reportedly include as well.

For a closer look at the Android phone's features, check out the review of the HTC One M8 (go.pcworld.com/onem8) by our colleagues at Greenbot. Assuming the Windows Phone version is similar, you can expect a metal chassis, a lovely 5-inch screen, and HTC's odd dual rear-facing cameras. There's no guarantee that HTC won't have a few surprises up its sleeve, however.

Verizon has dipped its toe into the Windows Phone market before; the carrier currently offers the aged HTC 8X for $50 on a two-year contract, for example. Windows Phone fans would be foolish to buy that model, however, when they can have the far superior Nokia Lumia Icon for free, again with a two-year contract. Until the launch of the "HTC M8 Windows," your best bet is the Icon.

—Mark Hachman

The HTC M8 Windows, as it appears on Verizon's site.

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BY IDG COMMUNICATIONS

Avoid potentially unwanted programs

Beware this common threat as you install free software.

BY LINCOLN SPECTOR

The only PUP no one loves

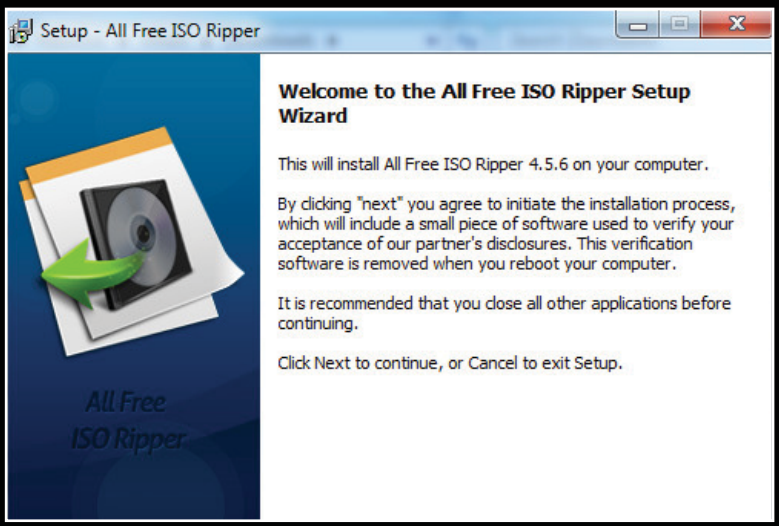
They're called PUPs—potentially unwanted programs—and they sneak onto your system as accessories to the program you actually intend to install. They can slow performance, install space-stealing browser toolbars, and even invade your privacy.

You don't have to give up free software to avoid PUPs, but you do have to pay attention during the installation, since each PUP first appears as a trap in the desired program's installation wizard.

Here are tricks and traps to look out for during software installations.

CONTINUED:

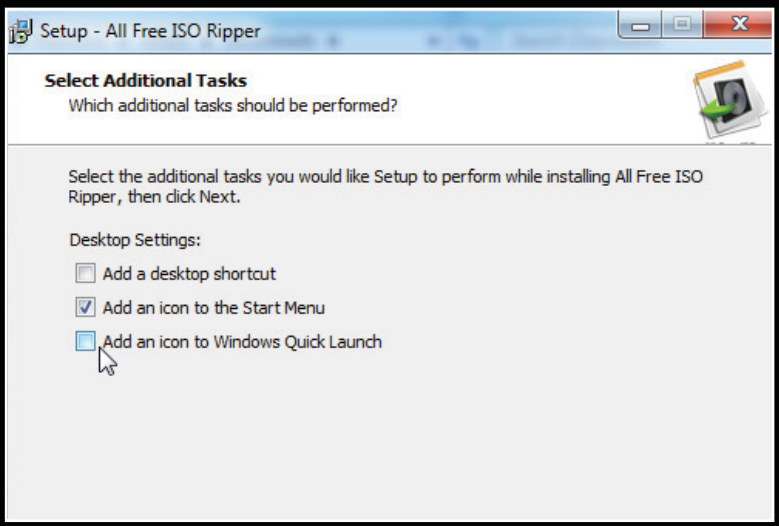
Avoid potentially unwanted programs


Setup - All Free ISO Ripper
Welcome to the All Free ISO Ripper Setup Wizard
This will install All Free ISO Ripper 4.5.6 on your computer.
By clicking "next" you agree to initiate the installation process, which will include a small piece of software used to verify your acceptance of our partner's disclosures. This verification software is removed when you reboot your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
All Free ISO Ripper

The suspect

Not long ago, I needed a simple program that could do one simple task: convert a video DVD—a DVD I created myself, with no DRM issues—into an ISO file. So I downloaded FreeAudioVideoSoft's All Free ISO Ripper. As I walked through the installation wizard, I found something of a PUP mother lode. Every dirty trick I knew, and a few I hadn't seen before, popped up. This made the ISO ripper a perfect tool for teaching people how to install a program—and only that program.

So let's click *Next* and get on with it.


Setup - All Free ISO Ripper
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing All Free ISO Ripper, then click Next.
Desktop Settings:
Add a desktop shortcut
Add an icon to the Start Menu
Add an icon to Windows Quick Launch

A false sense of security

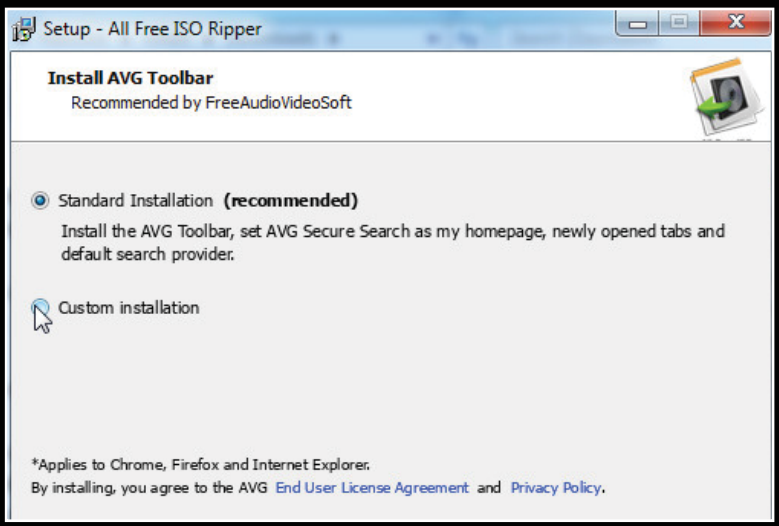
Okay, this second page of the wizard looks pretty harmless. In fact, it *is* pretty harmless.

The creators of the program even left the desktop shortcut option off by default. Good for them. Far too many programs want to mess up your desktop.

Enjoy this page. It's the last good thing you'll see from them for the rest of the installation.

CONTINUED:

Avoid potentially unwanted programs

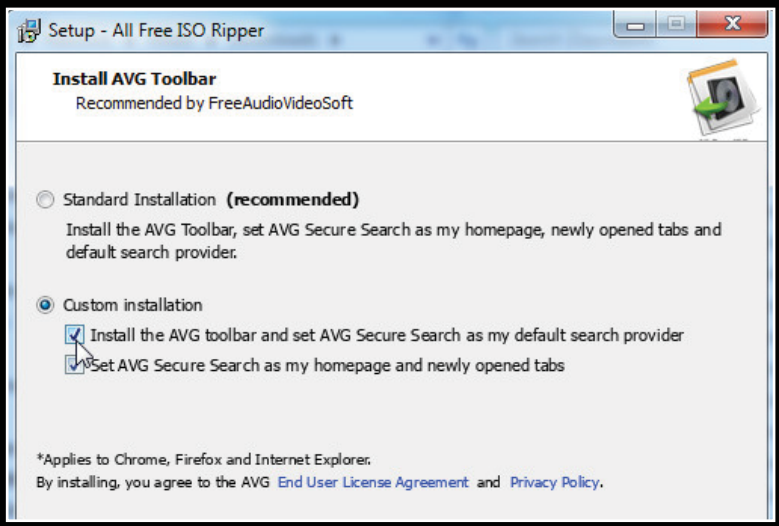

Setup - All Free ISO Ripper
Install AVG Toolbar
Recommended by FreeAudioVideoSoft
Standard Installation (recommended)
Install the AVG Toolbar, set AVG Secure Search as my homepage, newly opened tabs and default search provider.
Custom installation
*Applies to Chrome, Firefox and Internet Explorer.
By installing, you agree to the AVG End User License Agreement and Privacy Policy.

The first trap: Standard installations

How nice: The wizard recommends that you make your life a little easier with the Standard Installation. But check out the top of the window. This isn't about installing All Free ISO Ripper. It's about installing the AVG Toolbar. That's not what you signed up for.

Here's the first rule about avoiding PUPs: Never accept the "Standard Installation," the "Express Installation," the "Default Installation," or any installation that is "(recommended)."

Always select the Custom installation option.


Setup - All Free ISO Ripper
Install AVG Toolbar
Recommended by FreeAudioVideoSoft
Standard Installation (recommended)
Install the AVG Toolbar, set AVG Secure Search as my homepage, newly opened tabs and default search provider.
Custom installation
Install the AVG toolbar and set AVG Secure Search as my default search provider
Set AVG Secure Search as my homepage and newly opened tabs
*Applies to Chrome, Firefox and Internet Explorer.
By installing, you agree to the AVG End User License Agreement and Privacy Policy.

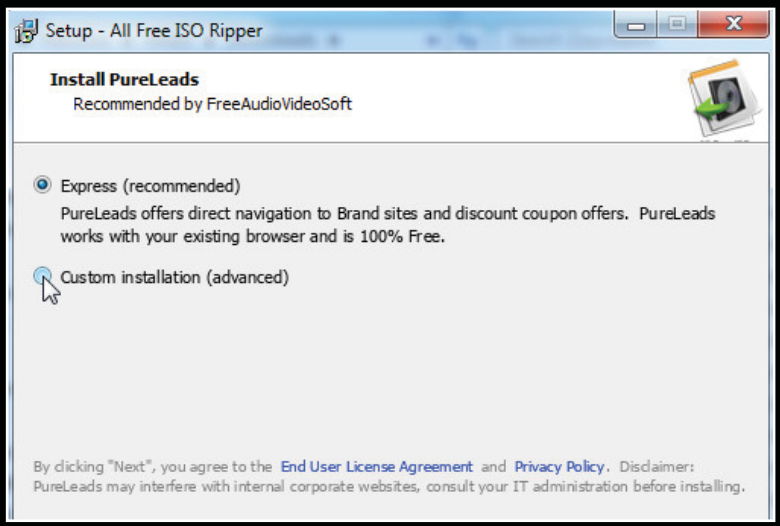
Disarm the trap

Look what you get when you select *Custom installation*! You get options, already checked, not only to install the toolbar, but also to let it take over your browser's homepage and search settings.

Is that why you're installing a DVD-to-ISO ripping tool? I didn't think so. Obviously, you need to uncheck those options before you continue.

CONTINUED:

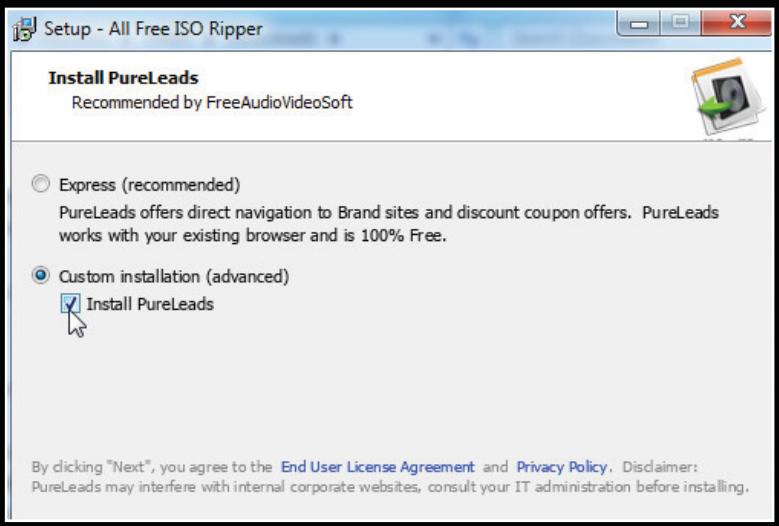
Avoid potentially unwanted programs


Setup - All Free ISO Ripper
Install PureLeads
Recommended by FreeAudioVideoSoft
Express (recommended)
PureLeads offers direct navigation to Brand sites and discount coupon offers. PureLeads works with your existing browser and is 100% Free.
Custom installation (advanced)
By clicking "Next", you agree to the End User License Agreement and Privacy Policy. Disclaimer: PureLeads may interfere with internal corporate websites, consult your IT administration before installing.

Trap number 2: Advanced mode

The next page in the installation wizard looks a lot like the last one, except that the default is "Express (recommended)," and the wizard wants to install something called PureLeads.

But this time, the wizard warns you that the Custom installation is "(advanced)." Uh-oh—this one is for hard-core techies! Do you dare click that option?


Setup - All Free ISO Ripper
Install PureLeads
Recommended by FreeAudioVideoSoft
Express (recommended)
PureLeads offers direct navigation to Brand sites and discount coupon offers. PureLeads works with your existing browser and is 100% Free.
Custom installation (advanced)
Install PureLeads
By clicking "Next", you agree to the End User License Agreement and Privacy Policy. Disclaimer: PureLeads may interfere with internal corporate websites, consult your IT administration before installing.

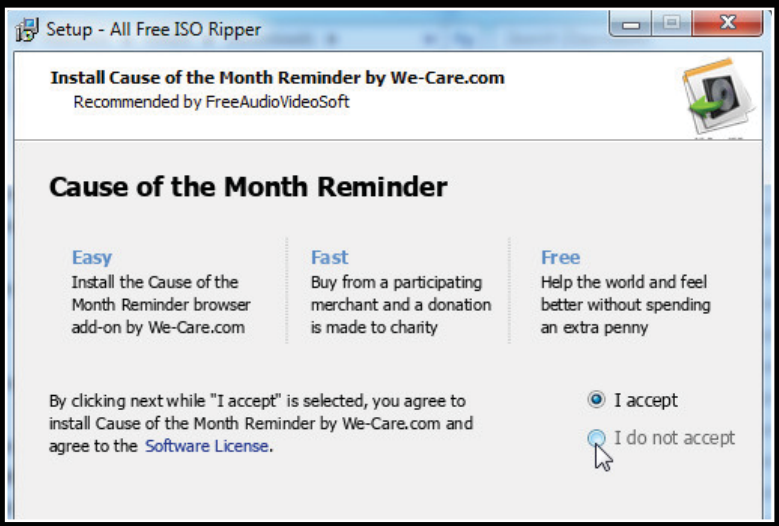
Trap number 2: Not so advanced after all

If you can gather the courage to do so, you'll find a single option that really isn't all that advanced: Install PureLeads.

Go ahead. Uncheck this option. I feel confident that's not too "advanced" for you.

CONTINUED:

Avoid potentially unwanted programs

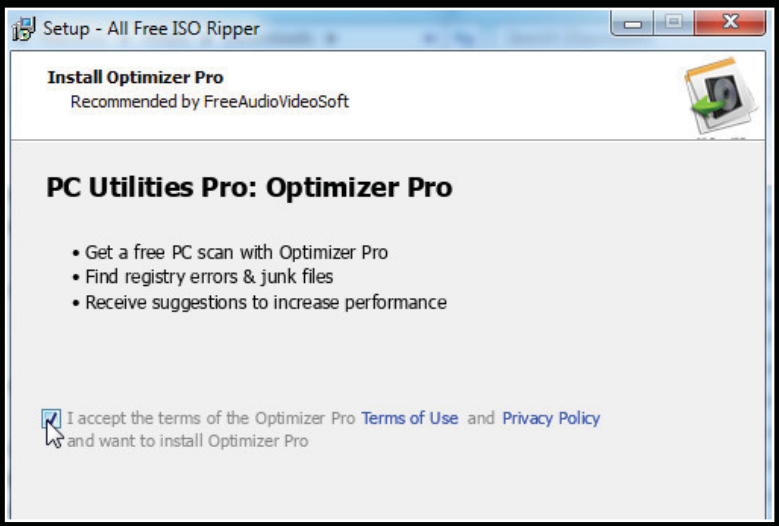

Setup - All Free ISO Ripper
Install Cause of the Month Reminder by We-Care.com
Recommended by FreeAudioVideoSoft
Cause of the Month Reminder
Easy
Install the Cause of the Month Reminder browser add-on by We-Care.com
Fast
Buy from a participating merchant and a donation is made to charity
Free
Help the world and feel better without spending an extra penny
By clicking next while "I accept" is selected, you agree to install Cause of the Month Reminder by We-Care.com and agree to the Software License.
I accept
I do not accept

A dirty shade of gray

I give to various causes and charities. And they all bury me in email asking for more money. The last thing I need is a "Cause of the Month Reminder" from We-Care.com. (Why isn't it We-Care.*org*?) You want to click "I do not accept," but you can't because that option is grayed out!

Except it isn't. It's just gray.

This is a dirty trick. The option you want may look unavailable, but if you point your mouse to it, you may still be able to select it.


Setup - All Free ISO Ripper
Install Optimizer Pro
Recommended by FreeAudioVideoSoft
PC Utilities Pro: Optimizer Pro
• Get a free PC scan with Optimizer Pro
• Find registry errors & junk files
• Receive suggestions to increase performance
I accept the terms of the Optimizer Pro Terms of Use and Privacy Policy
and want to install Optimizer Pro

Say 'I don't'

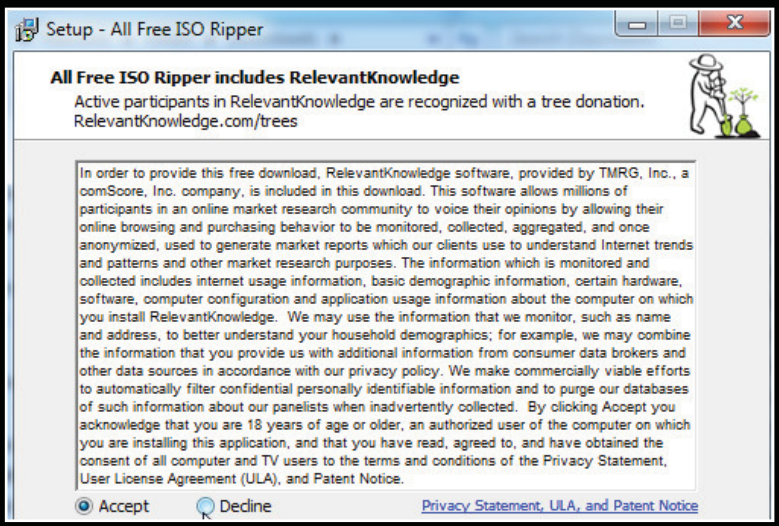
I tend not to trust supposed Windows "optimizers." The software is often either too cautious to do any good or too reckless to be safe. So I would uncheck the option to install PC Utilities Pro: Optimizer Pro.

Except, there's no such option to uncheck.

You can uncheck *I accept the terms of the Optimizer Pro Terms of Use and Privacy Policy*, though. If you don't want to install a program, you don't have to accept its Terms of Use or Privacy Policy—even if it's grayed out.

CONTINUED:

Avoid potentially unwanted programs


Setup - All Free ISO Ripper
All Free ISO Ripper includes RelevantKnowledge
Active participants in RelevantKnowledge are recognized with a tree donation.
RelevantKnowledge.com/trees
In order to provide this free download, RelevantKnowledge software, provided by TMRG, Inc., a comScore, Inc. company, is included in this download. This software allows millions of participants in an online market research community to voice their opinions by allowing their online browsing and purchasing behavior to be monitored, collected, aggregated, and once anonymized, used to generate market reports which our clients use to understand Internet trends and patterns and other market research purposes. The information which is monitored and collected includes internet usage information, basic demographic information, certain hardware, software, computer configuration and application usage information about the computer on which you install RelevantKnowledge. We may use the information that we monitor, such as name and address, to better understand your household demographics; for example, we may combine the information that you provide us with additional information from consumer data brokers and other data sources in accordance with our privacy policy. We make commercially viable efforts to automatically filter confidential personally identifiable information and to purge our databases of such information about our panelists when inadvertently collected. By clicking Accept you acknowledge that you are 18 years of age or older, an authorized user of the computer on which you are installing this application, and that you have read, agreed to, and have obtained the consent of all computer and TV users to the terms and conditions of the Privacy Statement, User License Agreement (ULA), and Patent Notice.
Accept
Decline
Privacy Statement, ULA, and Patent Notice

Read the fine print

Finally! Something we all know and ignore: the program's End User License Agreement. Before you select Accept, take a second look at this particular EULA. The title reads "All Free ISO Ripper includes RelevantKnowledge." And you'll notice that the first sentence also mentions RelevantKnowledge as software "included in this download."

The real relevant knowledge, so to speak, is that this isn't the All Free ISO Ripper EULA. Click *Decline* and go on.

Setup - All Free ISO Ripper
Completing the All Free ISO Ripper Setup Wizard
Setup has finished installing All Free ISO Ripper on your computer. The application may be launched by selecting the installed icons.
Click Finish to exit Setup.
Launch All Free ISO Ripper
All Free ISO Ripper

Absolution

Curiously enough, All Free ISO Ripper doesn't have its own EULA. After I declined the RelevantKnowledge one, the real program—the one that I wanted—installed in seconds.

If you're patient enough, you'll ultimately get what you want—and only what you want.

CONTINUED:

Avoid potentially unwanted programs

Happily ever after

When it came time for me to use All Free ISO Ripper, it worked like a dream. Easy, quick, and effective.

That's the thing about free software with PUPs: The installation is tricky. If you miss a trick or trap, you can waste time uninstalling software you never wanted to install in the first place.

But if you keep a keen eye out for tricks and traps, you can get something good for free.

You don't have to be an Xfinity WiFi hotspot

BY MARK HACHMAN

EVERYTHING WE'RE TOLD about digital security says that you should never let strangers roam your network without your permission. But if you're a Comcast customer, that's exactly what will happen as the company's Xfinity WiFi service rolls out. Fortunately, there's a way for you to bar the door.

With Xfinity WiFi, we're all hotspots now

If you live in a major metropolitan area on the East Coast or in the Midwest, chances are Xfinity WiFi is already operating in your area. The service takes advantage of the dual-band (2.5GHz/5GHz) Xfinity Wireless Gateway 2 modem (model DPC3939) that it has been distributing to customers for the past year. Comcast reserves one band and antenna for your own use, and one to serve as a public Xfinity WiFi hotspot.

There's an easy way to tell whether the public hotspot is enabled

Comcast says it will give you plenty of notice before your modem is enabled for the Xfinity WiFi service.

on your modem: You should see an "xfinitywifi" public SSID broadcast from your own router. To access the public hotspot, users will need a Comcast Xfinity login and password.

Comcast has already installed 1 million Xfinity WiFi hotspots across the nation, with plans to reach 8 million by the end of the year. Target metropolitan areas include Atlanta, Baltimore, Boston, Chicago, Denver, Detroit, Hartford, Houston, Indianapolis, Miami, Minneapolis, Nashville, Philadelphia, Pittsburgh, Portland, Sacramento, Salt Lake City, San Francisco, Seattle, and Washington D.C., Comcast says.

All you'll need to log in to Xfinity WiFi is your Xfinity username and password.

Comcast customers at the "Performance" (25-megabits-per-second [mbps]) tier or above will be able to surf on any public Xfinity WiFi hotspot for an unlimited amount of time, for free. (If you're a Comcast customer at a slower tier, or not a customer at all, you can try it free for two one-hour sessions, according to a Comcast spokesperson.)

To ensure that your bandwidth isn't monopolized, only five people will be able to sign on to an Xfinity Wi-Fi hotspot at one time, the spokesperson added.

Is sharing safe?

Whether this raises security issues is a more difficult question to answer. According to Comcast, if someone logs on and begins downloading pornography, for example, such actions will be linked to that person's account. You won't be liable for their actions, the spokesperson said.

But whether that person will be able to access other devices on your network, including your hard drive, is a separate question. And Comcast's response isn't reassuring.

Comcast encourages users to set strong passwords, and it supplies antivirus software to its customers. If the company does

detect an unusual amount or source of traffic, such as a customer who may have been infected by a virus and turned into a zombie, or bot (go.pcworld.com/internetbot), that customer will be notified.

That doesn't answer the question of whether, say, an elderly customer surfing away on an unprotected PC will be unduly exposed by Xfinity WiFi. Comcast recommends that customers use antivirus protection plus a firewall and take advantage of its gateway's 128-bit WPA and WPA2 encryption. "If a consumer doesn't put in the necessary precautions, to at least take some of these steps, they're not doing everything they can to protect their account," the spokesperson said.

Opting out

Comcast says that users should have been notified of their router's evolution into an Xfinity hotspot via email, mailers, and even a press release. If you don't want Xfinity WiFi, however, you have to opt out. Here's the process, as noted by Dwight Silverman (go.pcworld.com/optout):

- Log in to your Comcast account page at customer.comcast.com.
- Click on Users & Preferences.
- Look for a heading on the page for "Service Address." Below your address, click the link that reads *Manage Xfinity WiFi*.
- Click the *Disable Xfinity Wifi Home Hotspot* button.
- Click *Save*.

You can also call Comcast and ask that they put the modem into "bridge mode."

This is the Xfinity Wireless Gateway 2 modem that Comcast has been distributing to customers for the past year.

The answer: Buy an approved third-party router

The easiest way, of course, is to simply ditch Comcast's modem entirely. PCWorld Contributor Eric Geier gets into the nuts and bolts of how to do it (go.pcworld.com/ditchcomcast). To its credit, Comcast makes the process simple from its end as well.

First, check Comcast's site to see whether your existing cable modem is expiring (go.pcworld.com/expire), as Comcast may not tell you. An older modem may be hobbling your premium-broadband service. Proceed to Comcast's dedicated site to buy a new cable modem (go.pcworld.com/buymodem).

One great alternative to the Comcast Xfinity gateway is this simple, inexpensive cable modem from Arris and Motorola.

On the Comcast site, you'll find prices as low as $70 (new from Amazon) for the Arris/Motorola SB6121 bare-bones modem. (On the low end, of course, you'll need to supply a separate router.) Have a look at the specs, too: The SB6121 can download at a rate of 172 megabits per second and upload at up to 131 mpbs. That's more than enough for most small families, especially if your service is rated at only, say, 16 mbps. But if you're thinking of upgrading to the Extreme 150 tier, for example, that might be pushing it a bit. The $90 Arris SB6141 downloads up to 343 mbps at a time.

You can also pay more, if you wish, to buy a true gateway with integrated router capabilities, including the most recent 802.11ac technology for higher-bandwidth wireless streaming and MoCA support for using your existing coaxial cables as wired networking cables.

It's fairly certain that the third-party gateways on Comcast's site won't suddenly sprout Xfinity WiFi capabilities. Simply buy Comcast's low-end recommended modem and attach your own

router to it—either one you already own or a new model. (See PCWorld's roundup of the best 802.11ac routers of 2013 [go.pcworld.com/80211acroundup].)

The most annoying part of the process may be returning your existing router and phoning in your new router's MAC (media access control) address to ensure it can be identified by your cable provider.

Owning your own cable modem allows you to save money and control your own security.

Control, and peace of mind

So far, Comcast hasn't given any indication that it will penalize users for not adopting its Xfinity WiFi router. In other words, you can opt out of supplying a public Wi-Fi hotspot, and still take advantage of other Xfinity hotspots in airports and elsewhere. (Or Starbucks, for that matter.) And with 4G cellular plans becoming cheaper, there's always the option of tethering to your phone, too.

The bottom line, however, is that owning your own cable modem allows you to save money and control your own security. And if Comcast's new Xfinity WiFi hotspot network weirds you out, that's another reason to switch.

Hands-on: MiniLock's powerful file encryption is dead simple to use

BY IAN PAUL

THE CREATOR OF Cryptocat, Nadim Kobeissi, is back with another easy-to-use encryption tool. This time it's a free Chrome app called miniLock (go.pcworld.com/minilock) that aims to make it easy to create and share single encrypted files with others.

Similar to other encryption tools, miniLock relies on public-key cryptography. Under this scheme you have to share your public key with others so that they can encrypt files meant for you and only you.

But unlike many encryption tools, miniLock is very easy to understand and use.

The public key itself, dubbed your *miniLock ID*, is relatively short at around 45 characters. But it's still too long to remember easily, so you'll want to write it down or save it in a password manager such as LastPass or KeePass.

This is what miniLock looks like once it has generated a public key.

Implementation is key

The encryption scheme that miniLock employs is Curve25519 elliptic-curve cryptography, which is the same type of cryptography that Cryptocat uses. However, the problem with encryption tools often isn't the strength of their encryption but how well the encryption is implemented.

Judging the quality of the cryptography is beyond the scope of this article. But on the miniLock site (minilock.io), you can find a recent miniLock security audit by penetration-testing firm Cure53. The report gave miniLock a clean bill of health.

For anyone who wants to dive in right away, here's a quick hands-on tour of miniLock on a Windows 8.1 PC.

Generating your ID

To get started, visit the Chrome Web Store (go.pcworld.com/minilockapp) and install miniLock as you would any other Chrome app. Then you can either launch it right from the Chrome Web Store or via the Chrome App Launcher (go.pcworld.com/chromeapplaunch) in your taskbar, if you've installed that.

When it starts up, miniLock will ask you to sign in with your email address and a passphrase. The app will use these two pieces of information to generate your miniLock ID, which should take only a second or two.

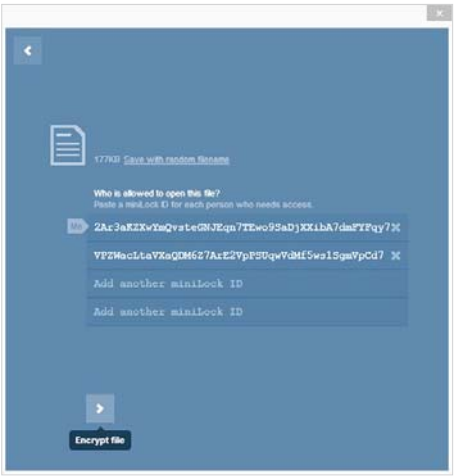
In my tests, miniLock was fairly picky about passphrases. I tried using

a ten-character randomly generated passphrase with capital and lowercase letters, numbers, and special characters. That should make for a fairly solid password if you ask me—but for miniLock it wasn't strong enough.

Instead, the app suggested that I use one of its auto-generated passphrases, which consist of a series of random dictionary words. To make things easier, I used one of the passphrases generated by miniLock, but you could also write your own. Just make sure it's unique and memorable enough that you won't forget it. Otherwise, storing it in a password manager will be important. As with other encryption tools, if you lose that passphrase, you won't be able to unlock any files sent to you with that miniLock ID.

Now that you have your own ID set up, let's encrypt a file to see how it works. Make sure you back up the test file in unencrypted form just in case something goes wrong.

To choose a file, either tap the file-drop area in the miniLock window or drag a file from File Explorer and drop it in the miniLock window. You'll then see the miniLock window flip around and reveal space for entering up to four miniLock IDs.



This file is ready for encryption.

By default, your miniLock ID will appear at the top, as you are the person encrypting the file.

Below that, you have the option to add another three people you want to be able to access the encrypted the file—assuming you have their miniLock ID. If you wanted to send this file to one person and didn't want to have

access to it yourself, you could just click the *X* to the far right of your miniLock ID to remove your key.

You also have an option underneath the filename to have miniLock to create a random filename—something you might do if you want to be really secretive about what you're sending.

The only drawback: You have to sign in every time you open the miniLock app.

Once the IDs for every recipient are ready to go, tap the arrow at the bottom of the window to start the encryption process. Depending on the size of the file, it could take a few seconds or a few minutes to finish.

After the encryption is done, the app will tell you "Your encrypted file is ready" in small letters below the filename. Next, click on the filename to save the file to your PC via Chrome's downloads manager.

Now that you have an encrypted file, you can send it to the intended recipients any way you like: email, instant message, USB key, Facebook—the choices are seemingly endless.

Decrypting

Decrypting a file is even easier than encrypting. Once you receive your miniLock-encrypted file via email (or whatever method), download it to your PC and drop it into the miniLock window. As long as you are signed in to miniLock and the file is encrypted with your miniLock ID, the file will be automatically decrypted. Then you can save it to your PC the same way you did with the encrypted file.

That's about all there is to miniLock. The only drawback that some people might find is that you have to sign-in every time you open the app. MiniLock does not save your login across user sessions. That was likely a conscious choice to protect your privacy. Still, some people may find the constant logins to be a drawback.

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Video players
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Comcast makes its pi
platform update, 4K
Comcast unveiled two new technologies to
them cords.
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Social media
For real. This app is totally sketch.
SOCIAL MEDIA
Creepy Facebook app
bikini shots, break-u
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TOP-RATED PHONES
HTC One
Apple iPhone 5
Motorola Droid M
LG Electronics Optimus G Pro

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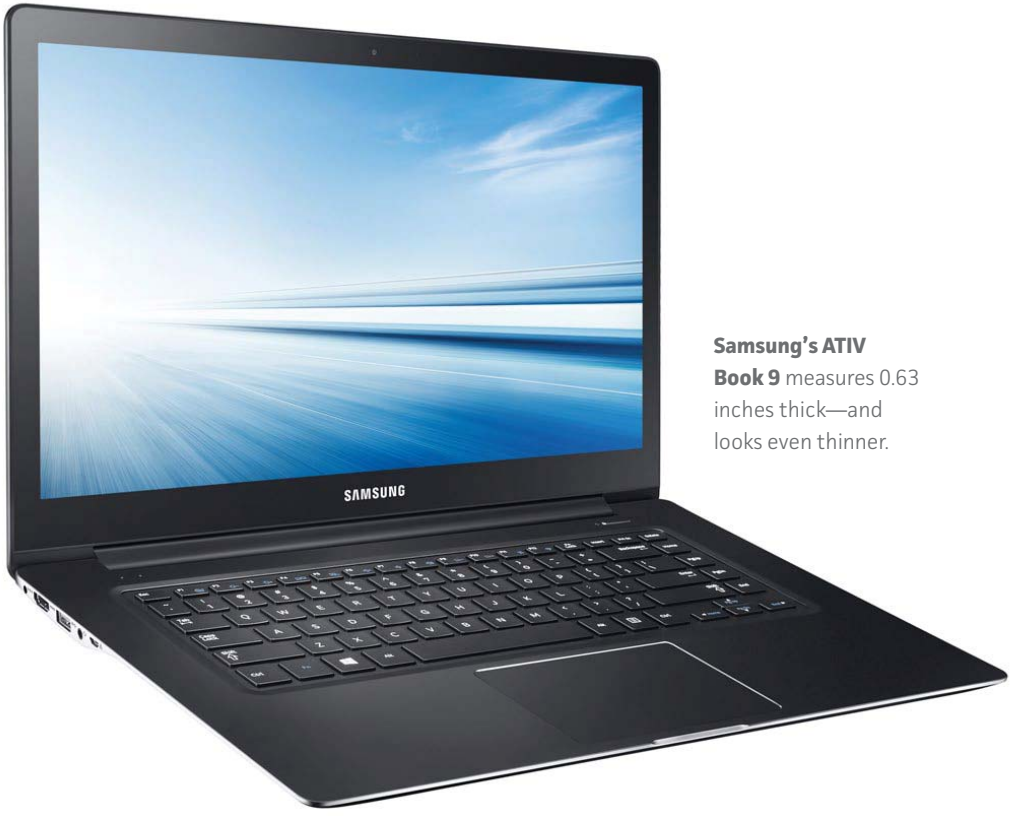
Samsung ATIV Book 9: It sounds as good as it looks

The audio features of this laptop are no gimmick, but do they justify the price tag? **BY MICHAEL BROWN**



Samsung's ATIV Book 9 measures 0.63 inches thick—and looks even thinner.

Watch the video at go.pcworld.com/ativvid

BASED ON THE way most laptops sound, I'd venture a guess that audio is the last thing engineers think about when they design laptops. But I won't lump Samsung's 2014 ATIV Book 9 (go.pcworld.com/ativ9) in that crowd, because it sounds absolutely divine—especially with headphones.

The Samsung ATIV Book 9 is a beautiful, elegantly thin laptop that will turn heads when you pull it out of your designer messenger bag. It's the thinnest, sexiest notebook we've reviewed this year. But it's much more pedestrian under the hood—with one exception. It's equipped with a Wolfson WM5102 audio CODEC (encoder/decoder). Wolfson produces some of the world's finest DACs (digital-to-analog converters).

But it's not entirely accurate to describe the ATIV Book 9 as being equipped with a Wolfson DAC. I don't mean to split hairs, but that description might lead you to think that this laptop is equipped with

the same type of audio subsystem found in high-end outboard DACs. Wolfson's WM5102 was designed for smartphones. It does have a DAC, but this one chip also integrates a host of other functions that are handled by discrete processors in top-shelf audio gear.

The ATIV Book 9, however, is the best-sounding laptop that I've ever listened to. The DAC inside the WM5102 can convert audio tracks with up to 24-bit resolution and sample rates up to 192kHz and deliver them to its headphone jack at an exceptionally high signal-to-noise ratio of 113 decibels (this according to Wolfson's data sheet). I don't have the measurement gear to verify that claim, but I can tell you that my ears definitely enjoyed the experience.

The Samsung ATIV Book 9, however, is the best-sounding laptop that I've ever listened to.

I automatically installed Foobar2000 (foobar2000.org) on the ATIV Book 9, because I've never encountered a fresh-from-the-factory Windows computer than could handle FLAC files.

But then I found ArcSoft's S Player+ on the ATIV Book 9. This audio/video player is exceedingly basic, but when you use it to play losslessly encoded audio tracks, it gives you the

Samsung ATIV Book 9 (2014 Edition)

PROS:

- Excellent build quality
- Very high-quality audio subsystem
- Every I/O port you could want

CONS:

- Crappy audio software undermines the benefit of the audio hardware
- Skimps on memory and storage

BOTTOM LINE:

Samsung's ATIV Book 9 is an exquisitely designed laptop with an unusually high-quality audio subsystem, but it's also very expensive.

$1500

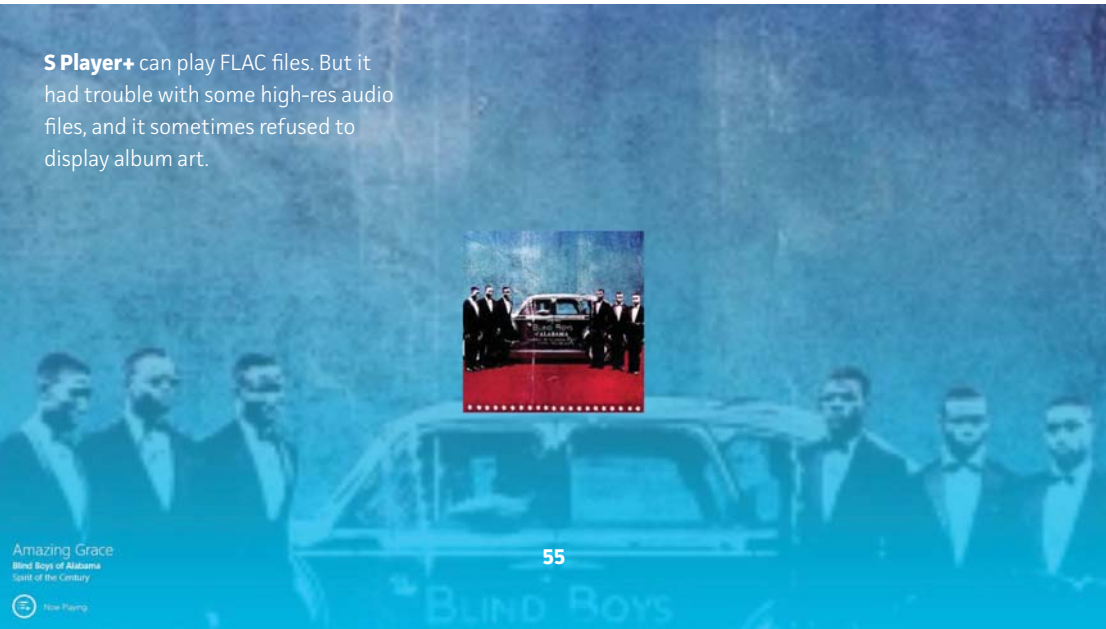
★★★½☆

option to play them in "lossless music mode" through the headphone jack. And for a while, I thought that this was the only way to tap the Wolfson WM5102, because the tracks didn't sound nearly as good when I played them using Foobar2000.

Foobar 2000 was able to play all my high-resolution tracks.

After a few email exchanges with Samsung, I learned that S Player+ uses Microsoft's WASAPI (Windows Audio Session API) to take complete control of the Wolfson WM5102. Using WASAPI, S Player+ can send an audio bit stream directly to the Wolfson WM5102, bypassing the Windows mixer and muting all other sounds. Once I installed the WASAPI component in Foobar2000, tracks on that player sounded just as sweet as they did with S Player+. And unlike that software, Foobar2000 was able to play all my high-resolution tracks.

So the ATIV Book 9 is a beautiful laptop that sounds divine. But with Samsung expecting the model reviewed here to fetch $1500, I



S Player+ can play FLAC files. But it had trouble with some high-res audio files, and it sometimes refused to display album art.

had to dig deeper to determine if its price-to-performance ratio is reasonable.

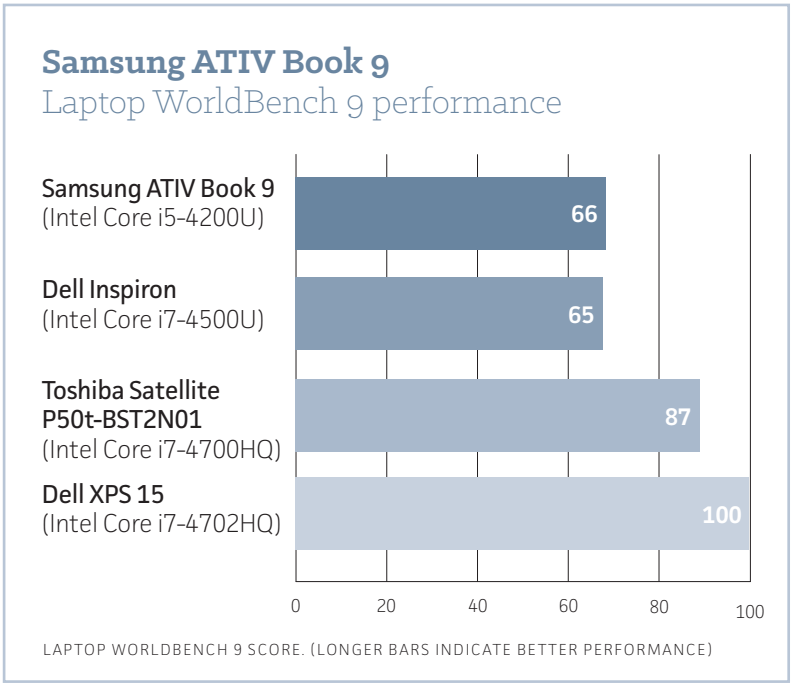
So what else you got?

That $1500 buys you an Intel Core i5-4200U CPU with integrated graphics driving a 15.6-inch touchscreen at 1920 by 1080 pixels. The system also comes with 8GB of memory, but only a 128GB SSD.

Spend another $130, and you can get Toshiba's Satellite P50t-BST2N01 with a Core i7 processor, 16GB memory and a discrete AMD GPU driving its 15.6-inch display at 4K resolution.

The Toshiba is thicker and heavier, its audio components aren't anywhere near as luscious, and its battery life is appalling, but that's a lot of extras for not very much money. And then there's Dell'sInspiron 15 7000-series laptop, also with a Core i7 CPU, and a discrete Nvidia GPU driving its 15.6-inch touchscreen at the same resolution as the Samsung.

No one would dispute that Samsung has built a beautiful laptop.



The presence of an SSD helped the ATIV Book 9 edge past Dell's Core i7-powered Inspiron 7537. The Toshiba is outfitted with a hybrid drive.

The Dell has a mechanical drive, and it's more than a pound heavier, but it offers twice as much memory and costs $260 less.

Samsung's machine does have other positive attributes. Its backlit, island-style keyboard feels awesome under the fingertips. And its oversized trackpad is exceedingly responsive and accurate. And despite its slim proportions, Samsung's engineers managed to squeeze in two USB 3.0 ports, one USB 2.0 port, a full-sized HDMI out, gigabit ethernet, an SD card slot, and even an analog video output.

Performance

In terms of benchmarks, the ATIV Book 9 squeaked past Dell's Inspiron 7537 in our Laptop WorldBench 9 benchmark suite. This can be

attributed to the presence of an SSD in the Samsung versus the mechanical hard drive in Dell's machine. PCMark 8—which is one component in that suite—is particularly sensitive to storage performance. But Samsung's reliance on integrated graphics resulted in its getting crushed in our gaming benchmarks. This is clearly not the machine to buy if you intend to play AAA games. Battery life, on the other hand, is excellent.

If you're passionate about high-quality audio, its price tag is probably justified.

The Samsung ATIV Book 9 is one of the sexiest laptops to come through the Lab this year, but it's expensive for the processing power, memory, storage, and video resolution it has to offer. If you're passionate about high-quality audio, this laptop's premium price tag is probably justified. Just be sure to install Foobar2000 and its WASAPI component before you plug in your favorite headphones.

The ThinkPad 10's display is its best feature.

ThinkPad 10: A thinner, lighter, high-res tablet

BY MICHELLE MASTIN

LENOVO'S ThinkPad 2 was a great tablet, but its design was chunky, and its screen had fewer pixels than that of the smaller and newer ThinkPad 8. Most important, Intel's older Atom platform struggled to run Windows 8 smoothly. The Lenovo ThinkPad 10 (go.pcworld.com/thinkpad10) improves in all of those respects without sacrificing any of the great quality or productivity perks of the ThinkPad line.

Thin and light, yet solid, the ThinkPad 10 is the slimmest large-screen Windows tablet we've encountered lately, edging out the Surface Pro 3 (0.35 inch versus 0.36 inch). The tablet weighs a scant 1.32 pounds.

Although the soft, matte-plastic back does not quite match the grippy, soft-touch texture of older ThinkPads, it feels nice. Because the back isn't metal, the screen has a little flex, but not to a worrisome extent.

The 1900-by-1200-pixel resolution is a joy to work with. I appreciate the extra space over a 1080p screen, and even with a 10.1-inch display such as this, I'm comfortable with the scaling turned down some to fit even more in. The brightness range is wide, too, going from bright enough to compete with window glare to dim enough to read in the dark without burning out my retinas.

One odd design decision is the mismatched corners. The bottom two corners are square, more in line with the boxy ThinkPad aesthetic, and they fit well in the various docks. The top corners, in contrast, are rounded. The square corners do feel

The tablet's mismatched corners are an odd design choice.

Lenovo ThinkPad 10

PROS:

- Strong performance
- Good battery life
- Beautiful 1920-by-1200-pixel display
- Thin and light

CONS:

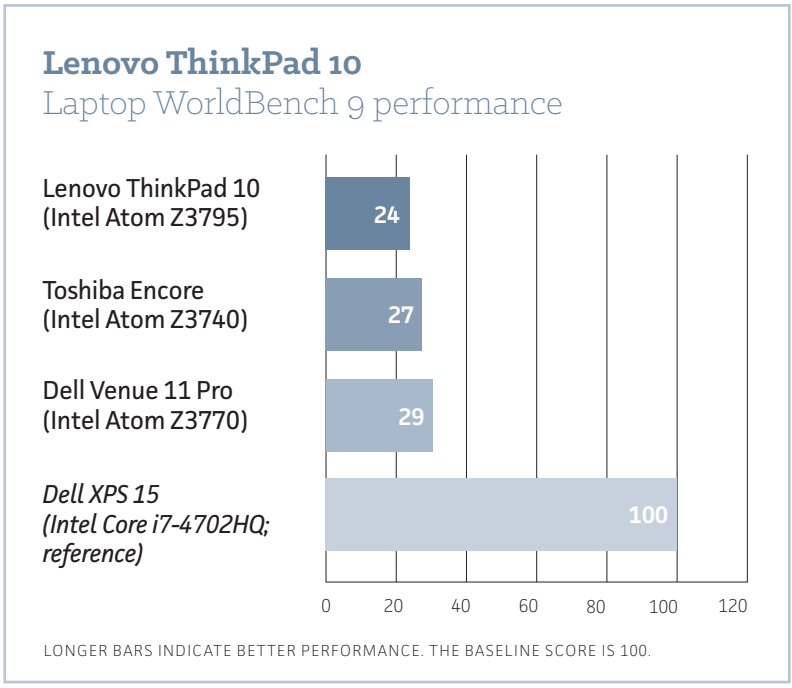
- Ultrabook keyboard dock allows just one angle
- Can run hot with demanding apps

BOTTOM LINE:

Bottom line: Lenovo's productivity-oriented tablet is a joy to use, but it suffers from a few ill-conceived design decisions.

$599

★★★★½



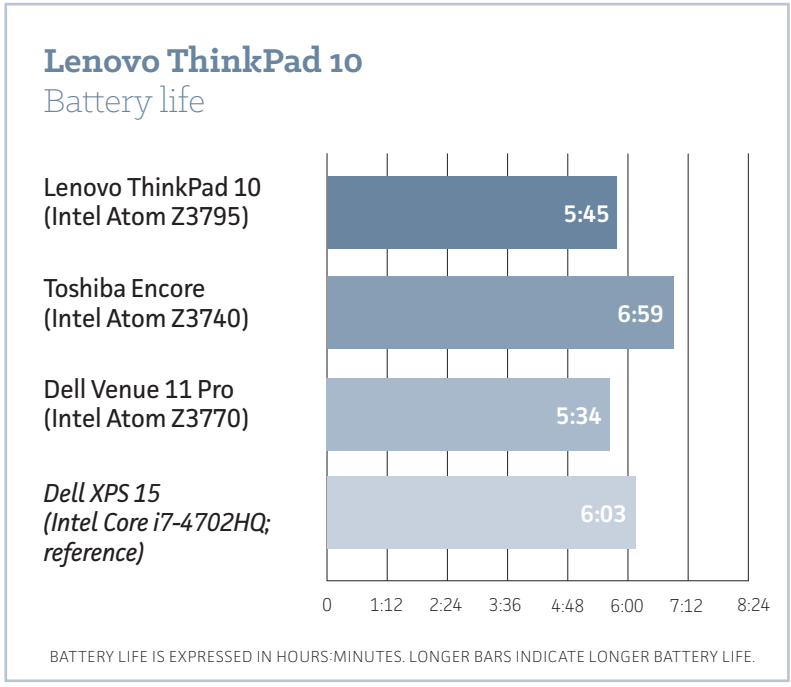
The ThinkPad 10's benchmark performance is on par with other Intel-powered Windows tablets, although it finished slightly behind Dell's Venue 11 Pro.

awkward to hold after a while, though, so it might have been better to round all the corners.

In the ThinkPad 10, Lenovo is taking advantage of the fact that the Intel Atom Z3795 is 64-bit capable. Our review unit came with only 2GB of RAM, but Lenovo offers the option to upgrade to 4GB of RAM and 64-bit Windows. You can purchase models with either 64GB or 128GB of storage.

Running a faster Atom in a thinner package can generate more heat: The tablet stayed cool when I was writing or browsing, but the right side got uncomfortably warm when I performed more-intense tasks.

Despite having a slightly faster Atom processor than the similarly



You should get a full day's work out of the Lenovo ThinkPad 10. It lasted 5 hours and 45 minutes on our harsh battery rundown test.

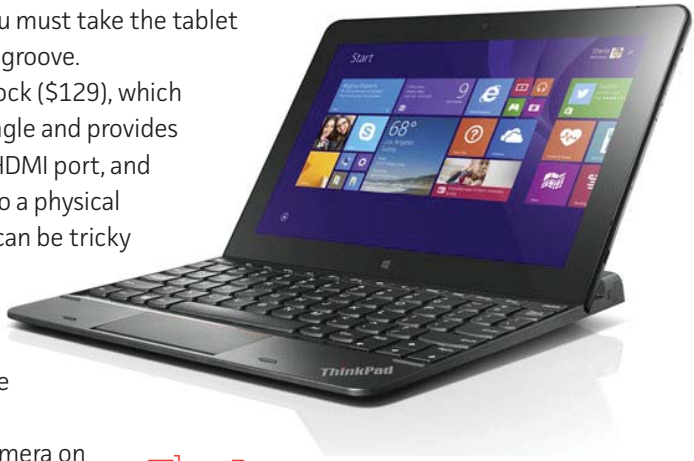
equipped Dell Venue 11 Pro, the ThinkPad 10 performed just behind it on most of our benchmark tests. Battery life is good for a light day's work, lasting 5 hours, 45 minutes--just 11 minutes longer than the Dell Venue 11 Pro. Our battery-rundown test is harsh, so you might get better results. Dell still has the advantage, though, as its mobile keyboard dock comes with an extra battery that significantly boosts its run time. The ThinkPad 10's Ultrabook keyboard ($119) lacks a battery option.

What the Ultrabook keyboard dock does have is fantastic keys. They are a little close together, but the travel and feedback are right in line with what I'm used to from ThinkPad keyboards.

The Ultrabook keyboard is not a clamshell dock; the tablet sits in a groove in the back, held by magnets. Unfortunately, the docked tablet is

stuck at a fixed angle, tilted too far back for my taste. To cover the screen for travel, you must take the tablet out and slot it into a different groove.

Also available is a desktop dock ($129), which holds the tablet at a better angle and provides two USB 3.0 ports, a full-size HDMI port, and ethernet. The tablet slots onto a physical connector that sticks up and can be tricky to seat properly.

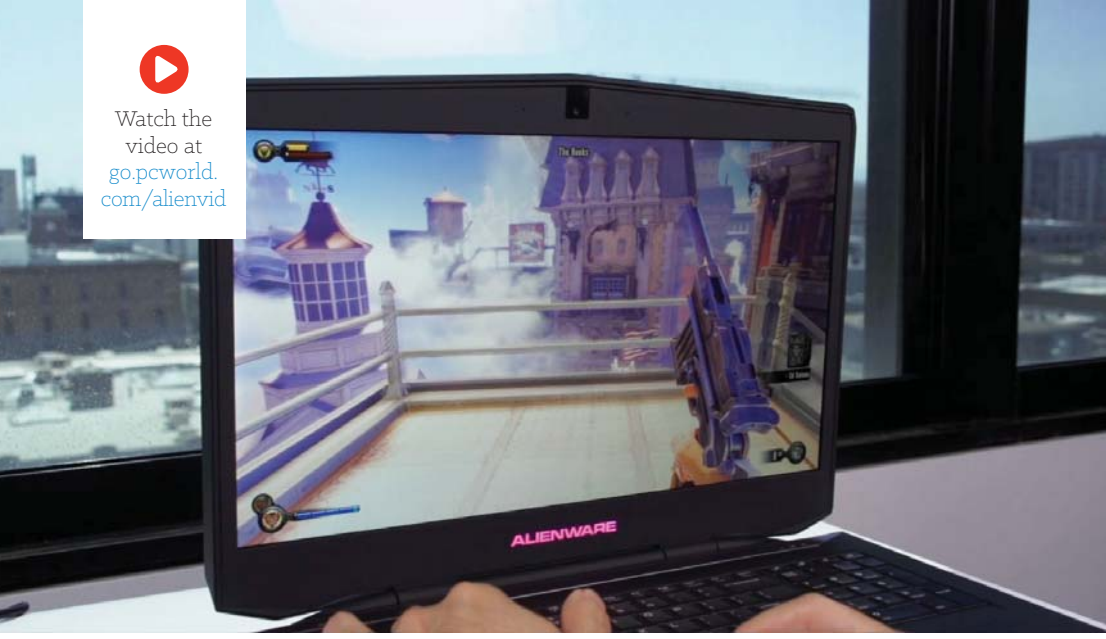


Lenovo's Quickshot cover ($45) for the ThinkPad 10 is every bit as nice as the one that goes with the ThinkPad 8. I find using the camera on a 10-inch tablet to be a bit gimmicky, but the ThinkPad 10's 8-megapixel rear camera takes nice shots, and the Quickshot cover makes getting into the camera app easy. The cover folds to prop up the tablet at several good angles for tabletop use. It attaches magnetically using the same guide holes as the various docks do, so you must take it off to dock the tablet.

The Lenovo ThinkPad 10 ticks a lot of the right boxes.

Last, but not least, the ThinkPad 10 comes with a digitizer pen. The battery-less pen writes and draws smoothly with no lag. You can store the pen in a slot in the Ultrabook keyboard dock or in a pen loop on the Quickshot cover.

The ThinkPad 10 ticks a lot of the right boxes. The most important element, the screen, is top-notch. The Atom processor is more than capable for everyday tasks, especially with 4GB of RAM. And the wide array of accessories covers the majority of uses and input preferences.



Watch the video at go.pcworld.com/alienvid

Alienware 17: Beauty and beast in one gorgeous laptop

BY SARAH JACOBSSON PUREWAL

DELL REDESIGNED its Alienware gaming laptop series in 2013. The Alienware 17 (go.pcworld.com/alien17) now sports curves instead of lines, lines instead of plain surfaces, and steel-gray, anodized aluminum and magnesium alloy instead of rubbery plastic.

As this is a gaming notebook, however, it's what's on the inside that really counts. The 2014 Alienware 17 is one of the first laptops to ship with an Nvidia GeForce GTX 880M graphics card, which has a stunning 8GB of GDDR5 memory. Nvidia's 800M-series GPUs also have new gamer-oriented features, including the Battery Boost mode for extending gameplay time and the ShadowPlay game-capture software.

Of course, the Alienware 17 is packed with other sweet specs, too, including a fourth-generation Intel Core i7-4910MQ processor (overclocked to 4.1GHz), 16GB of DDR3/1600 memory, a 256GB solid-

state drive for fast startup, and a 1TB, 5400-rpm hard drive for storage.

The notebook also has built-in Wi-Fi 802.11a/b/g/n, Bluetooth 4.0, and a gigabit ethernet port, plus a slot-loading Blu-ray reader and four USB 3.0 ports. Our review model came with Windows 7 Home Premium. You can order an Alienware 17 with Windows 8.1 on Dell's website, but be aware that this unit lacks a touchscreen. As configured, our review model cost $3385, with online discounts reducing it to $2968. That price tag puts it in the middle of high-end gaming notebooks.

The medium-sized trackpad lights up when you touch it.

PHOTOGRAPHY BY MICHAEL HOMNICK

Alienware 17 (2014 edition)

PROS:

- Rugged yet attractive chassis
- Exceptional performance
- Customizable ten-zone lighting system

CONS:

- Relatively short battery life
- Could use a better keyboard and touchpad

BOTTOM LINE:
The Alienware 17 is stylish and powerful, but only hard-core gamers will want to take this 9.5-pound beast on the road.

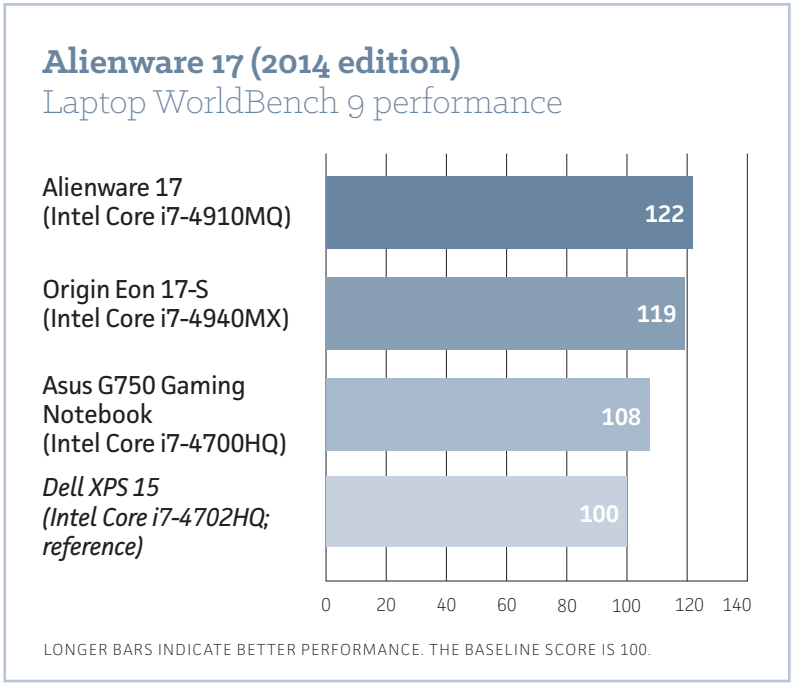
$2968 (as configured)

★★★★½

Performance: Excellent

The Alienware 17 performed well in our tests, achieving a Laptop WorldBench 9 score of 122. That makes the Alienware 17 the best portable performer we've tested so far on WorldBench 9.

The graphics performance is excellent, as you might expect. (It still can't rival the insanely powerful multiple-GPU setups you can stuff into a desktop tower, but if you're desperate for dual-GPU performance, the 18.4-inch Alienware 18 has a dual-GeForce GTX 880M option.) With its single 880M



The 2014 Alienware 17 is the fastest notebook we've ever tested.

graphics card, the Alienware 17 delivered excellent frame rates in all of our medium-quality graphics tests at resolution of 1920 by 1080 pixels. In *BioShock Infinite*, the Alienware 17 generated 121 frames per second; in *Grid 2*, it posted a frame rate of 135 fps.

Design: Alienware steps up

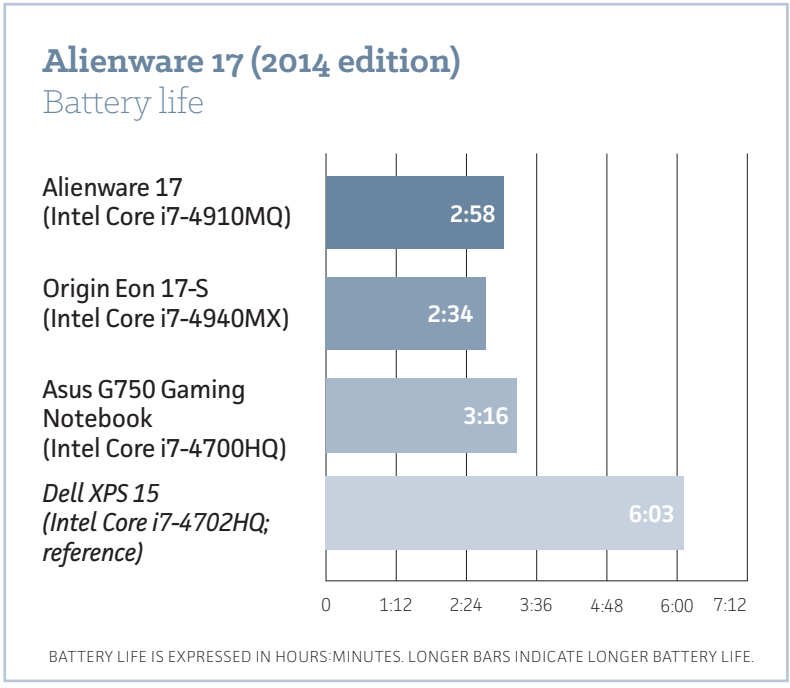
System designers can't do much to make a massive, 17.3-inch, 9.8-pound laptop look sexy. But Dell's Alienware team--which operates at least somewhat independently from the mothership--did a great job of refining and polishing its gaming machines. This iteration has an attractive metal cover, with well-placed curves and lines vaguely reminiscent of a Lamborghini. The laptop also feels extremely solid, as

if the chassis could survive a plummet from a second-story window.

Inside, it has a full-size keyboard, a numeric keypad, and a medium-size touchpad with two discrete mouse buttons. The upper-right corner houses a large power button, and only a few extra hotkeys sit above the number pad.

Sporting large, soft-touch keys, the keyboard is comfortable to use. The keys, however, are a little slippery, which you'll notice if you type quickly, and they provide weak tactile feedback. The touchpad is not quite as responsive as I'd like, but the mouse buttons are easy to press.

The keyboard is backlit, and Alienware provides a ten-zone lighting system you can customize with a software utility. Gamers will appreciate the four lighting zones dedicated to the keyboard and



The Alienware 17's battery life doesn't exactly impress, but the machine should deliver an entire movie without its power brick.

Don't expect to travel light. The Alienware 17 l tips the scales at 9.5 pounds.

number pad (three for the former and one for the latter). The zone covering the touchpad, which lights up each time you touch it, is particularly fun, if a little distracting.

Screen and speakers: Yeah and meh

The 17.3-inch display has a native resolution of 1920 by 1080 pixels. The bright antiglare screen presents crisp and accurate colors, and off-axis viewing angles look great. My only complaint is that the display appears a bit pixelated, especially if you're used to smaller, higher-resolution screens. If you use this laptop primarily for work, you'll notice this effect more than if you use it only to play games. HD video plays back nicely, with deep blacks and just a little artifacting in fast-paced scenes.

As for audio capabilities, the speakers produce fairly full, bass-inundated sound. They're better than the average set of laptop speakers, but I've definitely heard superior sound on other desktop replacements of a similar size. The Alienware 17 has a headphone jack, a microphone jack, and a combination headphone/microphone jack, which is good news for gamers with headsets.

The Alienware 17 is attractive, fast, and specced to the max. It's the best laptop performer we've tested so far, and it's lightweight for a machine in this category. Even though it has its drawbacks, this is one of the better-looking 17.3-inch notebooks, and it certainly delivers on performance.

WD My Cloud Mirror: Your private cloud, now with built-in redundancy

BY MICHAEL BROWN

I LIKED WESTERN DIGITAL'S My Cloud network-attached storage device when I reviewed it last year, but relying on a single-drive NAS can be risky. If that drive fails, and you don't have a backup, you could lose all your data.

WD's My Cloud Mirror (go.pcworld.com/mcmirror) solves that problem by putting a second drive in the same enclosure, and configuring the drives as RAID 1. All the same data is written to both drives, so that if one drive fails, you can recover everything from the other.

Our review model came with two 2TB drives, yielding 2TB of storage (not 4TB, because the drives are in RAID 1). You can reconfigure the drives in RAID 0 for blinding speed and 4TB of storage, but that would throw your data-redundancy strategy right out the window.

The My Cloud Mirror will also let you back up its contents to another storage device via its USB 3.0 port, but an even better data security strategy would be to deploy a second My Cloud Mirror (or a My Cloud EX2 or EX4) at a remote location and back up the contents of each drive to the other (you can also do this over your local network, but that's not as safe as having backups at different physical locations).

WD's software will also let you back up your My Cloud Mirror to the cloud (using either your ElephantDrive or Amazon S3 account. What it won't let you do is back up a client to the My Cloud Mirror itself over an

You can use the USB 3.0 ports for backup (to or from the My Cloud Mirror) or for additional storage.

Western Digital My Cloud Mirror

PROS:

- RAID 1 provides data security
- Can back up to other WD NAS boxes
- Very easy to set up and use

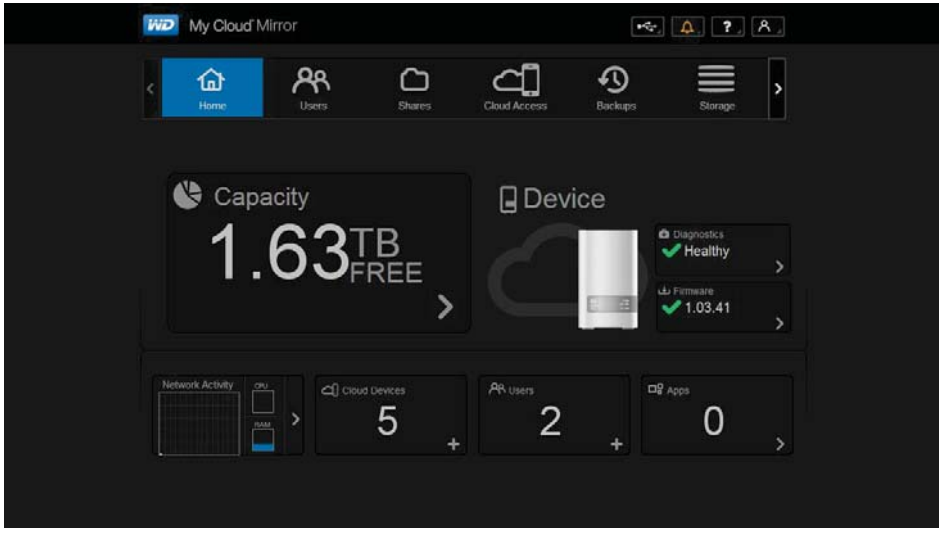
CONS:

- Cannot sync with other WD NAS boxes
- Moderately slow performance

BOTTOM LINE:
WD's My Cloud Mirror doesn't deliver barn-burning performance, but it's very easy to set up and use and it delivers almost everything you could want in a consumer NAS box.

$349

★★★★½



The My Cloud Mirror's user interface is well laid out and easy to understand.

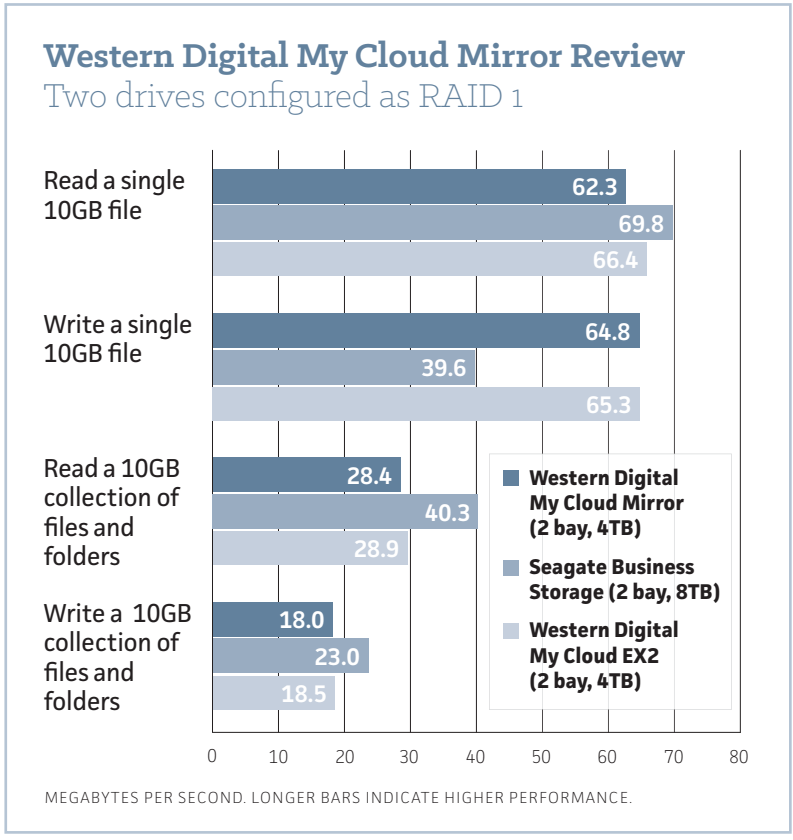
Internet connection; you have to attach the client to the same local network as the My Cloud Mirror.

Unlike a Dropbox account, which maintains a folder on your local device that is synchronized with your cloud storage, files are stored only on the My Cloud device. The benefit to this approach is that you don't consume the limited storage on your device. The drawback is that you need to have Internet access to be able to retrieve your files.

Western Digital is marketing the My Cloud Mirror to consumers, and this box has most of the features that audience will want. It has an integrated FTP server and peer-to-peer file-sharing.

Western Digital populates the My Cloud Mirror with its own WD Red drives, which are designed for 24/7 operation. The balance of the box's hardware features tilt toward consumer more than SMB. It has just one gigabit ethernet interface and one power connector, so you have no failover protection on either count.

WD populates the My Cloud Mirror with its own WD Red drives.



The My Cloud Mirror isn't the fastest NAS box we've tested—by a long shot—but it offers plenty of features and is very easy to use.

Consumers will appreciate the My Cloud Mirror's simple graphical user interface, which makes this machine very easy to set up. It comes from the factory with both iTunes and DLNA media servers for streaming media to PCs, smart TVs, mobile devices (smartphones and tablets), and media-streaming boxes in your home.

WD publishes a number of Android and iOS apps that will help you derive maximum benefit from the My Cloud Mirror.

If you use NAS to store critical files, the My Cloud Mirror is a solid buy.

The My Cloud Mirror is no barn-burner when it comes to performance. It wasn't terrible at dealing with very large files (we test read and write performance with a single 10GB file), but it was considerably slower reading and writing our 10GB collection of files. And that will likely be th more common real-world usage scenario.

If you think you'd benefit from the additional features that the My Cloud EX2 has to offer (dual ethernet, dual power-supply inputs, and 10 licenses for WD's SmartWare Pro), that box is street-priced just $18 higher than the My Cloud Mirror.

The original My Cloud is a very good—if bit slow—consumer-oriented NAS box, an the My Cloud Mirror adds a valuable feature in RAID 1. If you use your NAS to store critical files, this is a solid buy.

The drives inside the My Cloud Mirror are very easy to access without tools.

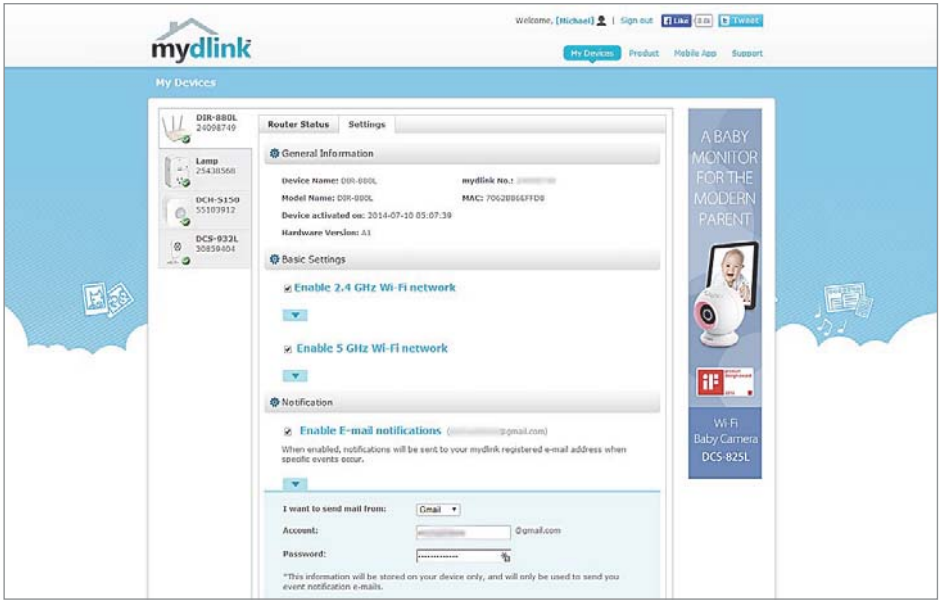
D-Link DIR-880L: A good, basic 802.11ac Wi-Fi router

BY MICHAEL BROWN

IF YOU'RE A FAN of D-Link's connected-home product line, the D-Link DIR-880L (go.pcworld.com/dir880l) is the 802.11ac Wi-Fi router to buy. It's also a good choice if you're merely seeking a new router that's easy to set up and manage, with or without a PC.

It's priced about $30 less than either the Asus RT-AC68U or the Linksys WRT1900AC. Like both of those routers, this is a dual-band

The DIR-880L has three external, upgradable antennas.



The Mydlink portal lets you manage the DIR-880L via the cloud.

model that supports 802.11b/g/n clients on its 2.4GHz frequency band (802.11n clients at speeds up to 600 megabits per second) and 802.11a/ac clients on its 5GHz band (802.11ac clients at speeds up to 1300 mbps). Add 600 to 1300, and you get the oh-so-popular AC1900 marketing label, which D-Link applies to this model. You can set up a guest network on either or both bands.

The low-profile enclosure sports three oversize antennas that you can remove and upgrade. LEDs on top indicate the status of the router's power, Internet connection, 2.4GHz and 5GHz wireless networks, and USB ports. A USB 3.0 port resides on the left, and a USB 2.0 port, a power button, a WAN port, and the usual four-port gigabit ethernet switch sit in the back. If you don't like this router's desktop footprint, you can hang it on the wall.

If you don't like this router's desktop footprint, you can hang it on the wall.

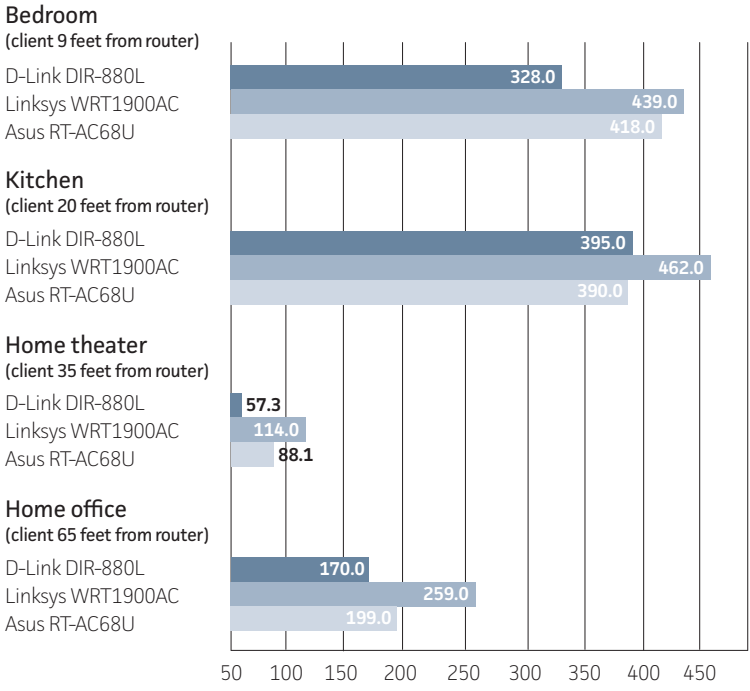
The firmware provides basic, consumer-oriented features, including

beamforming, VPN support using L2TP over IPSec, and a Quality of Service engine that prioritizes lag-sensitive traffic such as online games, VoIP calls, and video streaming. You can also manually assign higher priority to individual clients.

You'll find support for advanced configurations such as port forwarding and assigning clients to static routes, but the DIR-880L limits you to 15 instances in each case. Parental controls are even more

D-Link DIR-880L

5GHz 802.11ac performance



IN MEGABITS PER SECOND. LONGER BARS INDICATE HIGHER PERFORMANCE.

D-Link's router trailed pricier rivals in our tests using an Asus USB-AC56 adapter.

restricted: You can set schedules for when individual clients—or the router itself—are allowed online, or you can block websites.

The DIR-880L is easy to set up in a Web browser. If you'd prefer to use a tablet or smartphone, D-Link's QRS Mobile app is available for Android and iOS. The router comes preconfigured with a password to guard its wireless networks. The admin user interface is not password protected, but fortunately the setup wizard prompts you to create a password for that purpose. Register for D-Link's free Mydlink service, and you can access and manage this router from the cloud.

The router's USB ports can share a printer, a scanner, or a storage device (any combination of two) over your network. I didn't evaluate the router's performance on that score. The DIR-880L is DLNA compatible, but it doesn't have an iTunes server.

In performance tests, the DIR-880L was much slower on the 2.4GHz frequency band than the Asus and Linksys routers at close range (with an 802.11n client in the same room as the router, separated by 9 feet). It was slightly faster than the Linksys model, however, when the client was in my kitchen (20 feet from the router, separated by one wall with plywood cabinets). And it was much faster on this band than both competing routers when I tested it in my home

D-Link DIR-880L

PROS:

- Easy to manage via the cloud
- A good match for D-Link's connected-home products
- Can share up to two USB devices over the network

CONS:

- Slower than competitors in 802.11ac performance
- No iTunes server or FTP server; limited advanced features

BOTTOM LINE:
The DIR-880L is a good choice if you don't need the power of more-expensive 802.11ac models.

$190

★★★½☆

theater (client 35 feet from the router) and my home office (client 65 feet from the router).

D-Link's router trailed both the Asus and the Linksys with an 802.11ac client (for the test, I plugged an Asus USB-AC56 Wi-Fi adapter into the client's USB port) in three of my four test locations. TCP throughput of 328 megabits per second at close range is nothing to sneeze at, but the WRT1900AC delivered 439 mbps here and the Asus managed 418 mbps. The DIR-880L will probably stream high-definition video to most rooms in the typical home, but it wasn't nearly as fast as the competition on this band in my longer-distance tests.

The DIR-880L will probably stream HD video to most rooms in the typical home.

I've found that the best way to get maximum performance from an 802.11ac router is to deploy two of them: one as a Wi-Fi router and the other as a Wi-Fi bridge that you hardwire to one or more clients. You can configure a second DIR-880L as a bridge, but I couldn't test the product's performance in such a scenario because D-Link sent only one router.

The D-Link DIR-880L doesn't deliver state-of-the-art performance, but it isn't slow. Although this router won't excite router geeks, it isn't a bad choice for mainstream users.

The Coalesse Free Stand is perfect for a home office

BY MICHAEL BROWN

Watch the video at go.pcworld.com/coalesse

WORKING AT HOME has a lot of upsides, but one major downside: Home furniture is designed for leisure, not work. Dining tables are too high, coffee tables are too low, and lap desks are too small and unstable. If you spend a lot of time on your laptop, those poor ergonomics invite a host of back problems, repetitive strain injuries, and other maladies.

Set up Coalesse's Free Stand (www.coalesse.com) in front of just about any chair, and you have a work-friendly environment that will keep you productive and healthy. And when the factory whistle blows

at the end of the day, you can fold the Free Stand flat and slide it under your sofa or easy chair to rid yourself of the irksome visual reminder that you have to work for a living.

The Free Stand is well made, with a stand fabricated from extruded aluminum painted with a durable powder-coat finish. A pair of 22-inch-long feet give it stability, and an 18-inch-wide opening between them accommodates your feet. The work surface rotates a full 360 degrees, so you can also orient the base sideways to your lap. You can lower it to 20 inches and raise it as high as 27 inches, so you should be able to find the ideal height whether you're sitting at a dining room table, on a sofa, or in a beanbag chair. It's too short to function as a standing workstation, though.

The Free Stand has robust hinges and superb fit and finish.

PHOTOGRAPHY BY MICHAEL BROWN

The work surface measures just over 19 inches wide by 11 inches deep—roomy enough to accommodate a 14-inch laptop, but I had to slide the computer to the left a wee bit to make room for a mouse. According to Coalesse, you can wipe away spills from the rigid ABS plastic surface using typical household cleaning products, such as Windex or Formula 409, but avoid bleach-based products and hand

Coalesse Free Stand

PROS:

- Sturdy and built to last
- Folds to 5 inches flat
- Lightweight—just 11 pounds

CONS:

- Expensive
- Work surface isn't wide enough to accommodate a mouse

BOTTOM LINE:

The Free Stand is undeniably expensive, but this well-built mobile work surface will improve home office ergonomics and productivity.

$399

★★★★½

When collapsed, the Free Stand is just 5 inches tall.

sanitizers as they can discolor or damage the nonslip painted finish.

The Free Stand has one handle and three control mechanisms. To fold it flat, lower the work surface by pushing a button at the top of its pillar. Pull a lever underneath the work surface to drop it to a right angle to the pillar (it will lock in that position). Push a second button at the bottom of the pillar to fold the stand flat. Repeat the same three steps in reverse to set it up again. The Free Stand's smooth feet glide over hard-surfaced floors and carpets with equal ease.

Pricey but nice

The Free Stand weighs 11 pounds, and the handle makes it easy to carry from one room to another, although it's a tad too hefty for travel.

I like everything about the Free Stand except its $399 price tag. You could probably find a laptop stand at Ikea for a fraction of that price, but not with the same high-quality construction, and it probably wouldn't fold up. The Free Stand is built to last, you can stash it anywhere, and it's a joy to use.

It's no joke: climate change is a critical issue for all life on Earth. But can the actions of one individual really make a difference? Visit nature.org to calculate your impact on the world around you and learn about steps you can take to make the world a better place for us all.

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WHAT'S NEXT FOR WI-FI

While you're considering which 802.11ac router to buy, the industry is working to render that standard obsolete.

BY ERIC GEIER • ILLUSTRATION BY JOHN HERSEY

Now that blazing-fast routers based on the IEEE 802.11ac standard are finally entering the mainstream (see our review of the D-Link DIR-880L on page 74 for example), intrepid engineers are cooking up all-new hardware that will make that gear's performance seem poky by comparison.

That's not to say 802.11ac is about to fall by the wayside—the IEEE (Institute of Electrical and Electronics Engineers) didn't officially ratify this wireless standard until December 2013. It's just that the chipsets capable of delivering all the features and performance of 802.11ac are still in development.

The truth is, most of the first 802.11ac routers on the market were based on draft versions of the 802.11ac standard. Although some newer Wave 1 models, such as Netgear's six-antenna Nighthawk X6, are implementing a few cool tricks to squeeze more performance from that technology, a second wave of 802.11ac routers will hit store shelves in early 2015. Those devices will support optional features that will deliver even higher wireless performance. Around the same time, new and complementary wireless standards made for specialized applications will also appear.

The second wave of 802.11ac routers will deliver even higher wireless performance.

In the end, there's no point in trying to cheat obsolescence by putting off your next router purchase, because the industry is

already hard at work developing the successor to 802.11ac.

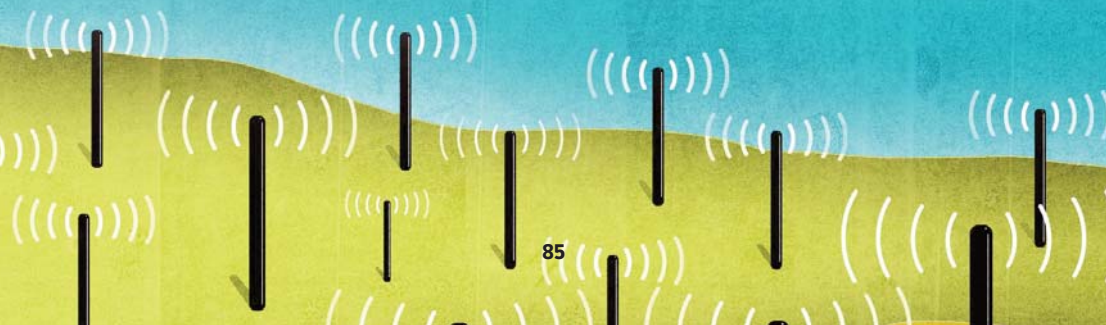
The two-party system

The IEEE defines Wi-Fi standards such as 802.11ac and the older 802.11n. The Wi-Fi Alliance (an association of companies that build wireless-networking devices) certifies that the hardware based on those standards will work together.

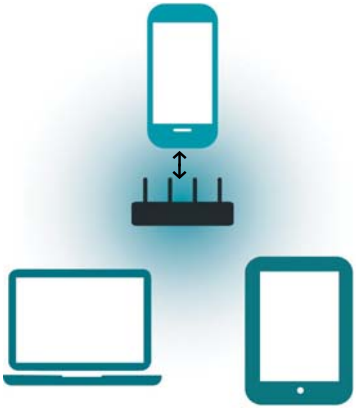
Wi-Fi Alliance certification is not a requirement—hardware manufacturers pay for the designation—but it can be reassuring to consumers, especially in the early days of a new standard. The promise that hardware will work as expected is important because the IEEE can take years to finalize standards; for example, it started working on 802.11ac in 2008 and finished in late 2013. Equipment makers often don't want to wait, so as soon as the ink dries on an early draft, they market new products based on that draft standard. Buffalo shipped out the first 802.11ac router in 2012, but the Wi-Fi Alliance didn't launch its first 802.11ac certification program until the middle of 2013.

What's so special about 802.11ac? For starters, it operates on the 5GHz frequency band, which is less crowded than the 2.4GHz band; as a result, its signal is less susceptible to interference.

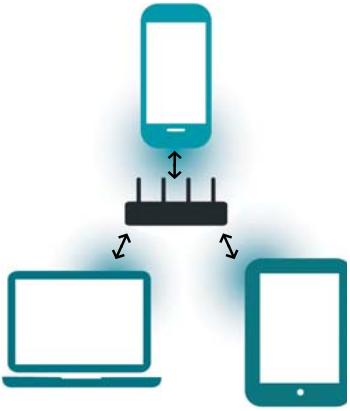
In addition, its performance significantly exceeds that of the previous standard. SU-MIMO (single-user multiple-input/multiple-output) technology, one of the hallmarks of the older



New technology brings faster connections



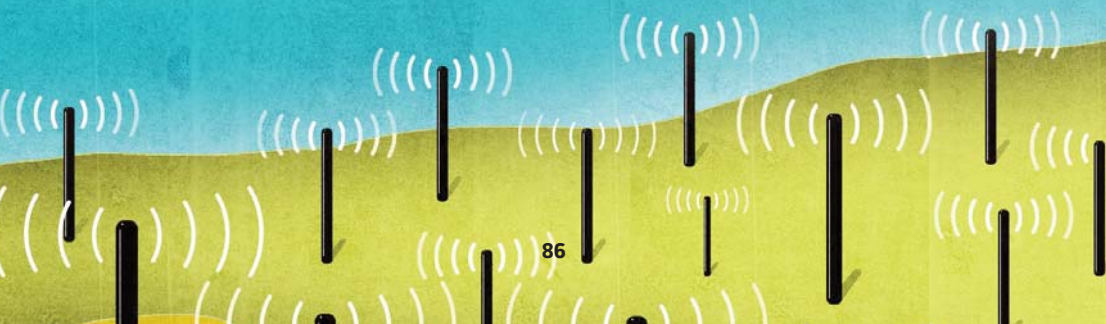
Single-user MIMO
Serves one device at a time.



Multi-user MIMO
Multi-user beamforming serves multiple devices simultaneously.

802.11n standard, allows the transmission of multiple spatial streams to a single client. This technology carries over to 802.11ac, which adds a more-powerful modulation technique (among other things) to produce an impressive maximum physical link rate of 433 megabits per second per spatial stream.

Because a Wave 1 802.11ac router can support up to three streams simultaneously, it can send and receive data at a top physical link rate of 1.3 gigabits per second. Compare that with an 802.11n router, which provides up to three spatial streams with a



Dell's Wireless Dock D5000 operates a short-range network on the 60GHz frequency band to eliminate the need for display, mouse, keyboard, and audio cables.

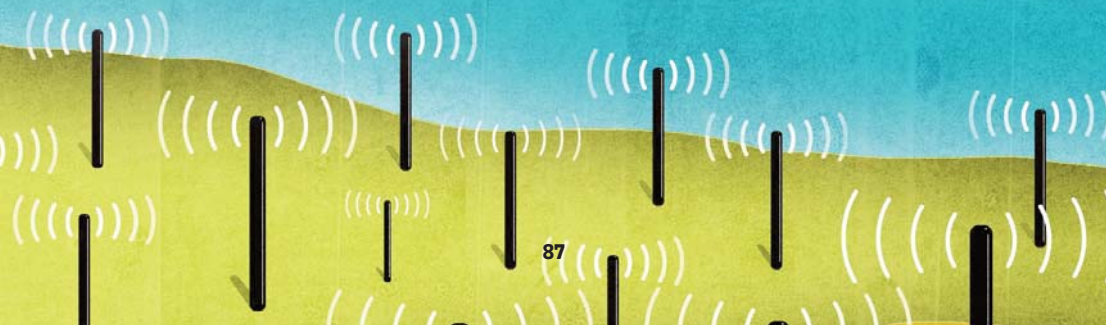
maximum physical link rate of 150 mbps each (for aggregate throughput of 450 mbps).

In April, Quantenna Communications announced its first Wave 2 802.11ac chipset (go.pcworld.com/quantenna). The second wave of 802.11ac routers is slated to arrive sometime next year. These router models will take advantage of optional elements of the 802.11ac standard. First, they'll support MU-MIMO (multi-user multiple-input/multiple-output) technology, which will allow them to transmit multiple spatial streams to multiple clients simultaneously.

Second, they'll bond multiple channels on the 5GHz frequency band to create a single channel that has 160MHz of bandwidth. (Wave 1 802.11ac routers can bond 5GHz channels, but the resulting channel is only 80MHz wide.) Third, whereas 802.11n and Wave 1 802.11ac routers support a maximum of three spatial streams, Wave 2 802.11ac routers can support as many as eight spatial streams.

Using wider channels or additional spatial streams (not enough bandwidth is available to do both), improved beamforming (go.pcworld.com/beamform), and other techniques, Wave 2

PHOTOGRAPHY BY ROBERT CARDIN



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802.11ac routers will deliver maximum physical link rates in the range of 7 to 10 gbps.

The next new Wi-Fi: IEEE 802.11ax

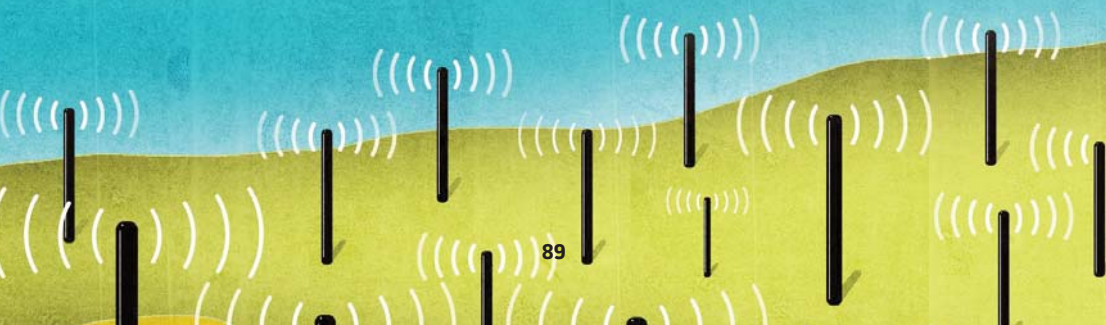
In a recent briefing, Greg Ennis, the Wi-Fi Alliance's vice president of technology, said the IEEE anticipates that the successor to 802.11ac will be 802.11ax. Although the standards body doesn't expect to ratify 802.11ax before March 2019, products based on a draft could reach the market as early as 2016—just as we saw draft-802.11n and draft-802.11ac products before those standards received official ratification.

One of the top objectives of 802.11ax, according to Ennis, is to quadruple speed to individual network clients—not just to increase the speed of the network overall. Chinese manufacturer Huawei, which has engineers in the IEEE 802.11ax working group, has already reported Wi-Fi connection speeds up to 10.53 gbps on the 5GHz band.

Ennis said the 802.11ax standard will improve Wi-Fi speed and reliability in environments with high numbers of users, such as hotspots in public venues, by employing the available spectrum more efficiently, doing a better job of managing interference, and enhancing underlying protocols such as MAC (medium access control) data communication.

Products based on a draft of the 802.11ax standard could reach the market as early as 2016.

The 802.11ax standard will also use OFDMA (orthogonal



frequency-division multiple access) to boost the amount of data a router can transmit. Like OFDM (orthogonal frequency-division multiplexing), OFDMA encodes data on multiple subcarrier frequencies, essentially packing more data into the same amount of air space. The "multiple access" portion of the OFDMA name describes a means of assigning subsets of those subcarrier frequencies to individual users.

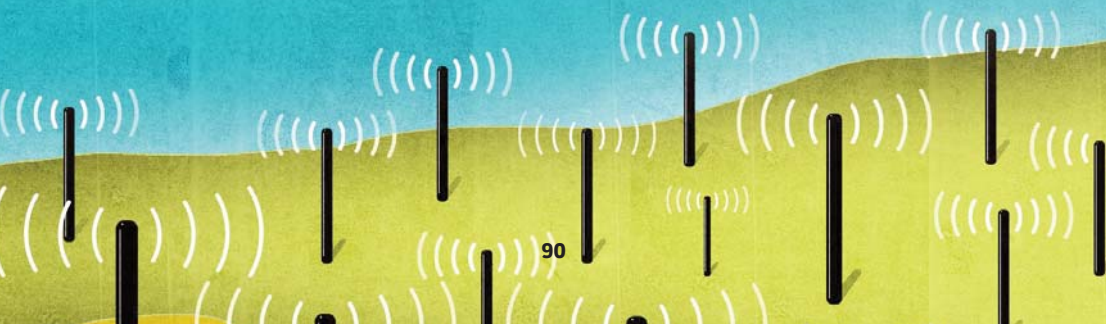
Complementary standards

While one segment of the IEEE is working to define the successor to 802.11ac, other factions are developing two complementary wireless-networking standards that address particular needs.

First, the IEEE 802.11ad (go.pcworld.com/80211ad) standard employs unlicensed spectrum in the 60GHz frequency band to build fast short-range wireless networks with peak transmission rates of around 7 gbps.

The few 60GHz products to reach the market are designed to operate at very short range.

Transmitting data at 60GHz has two major drawbacks: The extremely short waves have difficulty penetrating walls, and oxygen molecules begin to absorb electromagnetic energy at 60GHz. That explains why the relatively few 60GHz products to reach the market so far are designed to operate at very short range, or just within a single room. The Dell Wireless Dock D5000 (go.pcworld.com/dockd5000) is a good example of the former, and the DVDO Air



(go.pcworld.com/dvdoair), which streams HD video and audio from a Blu-ray player to a video projector without a cable, is a great example of the latter.

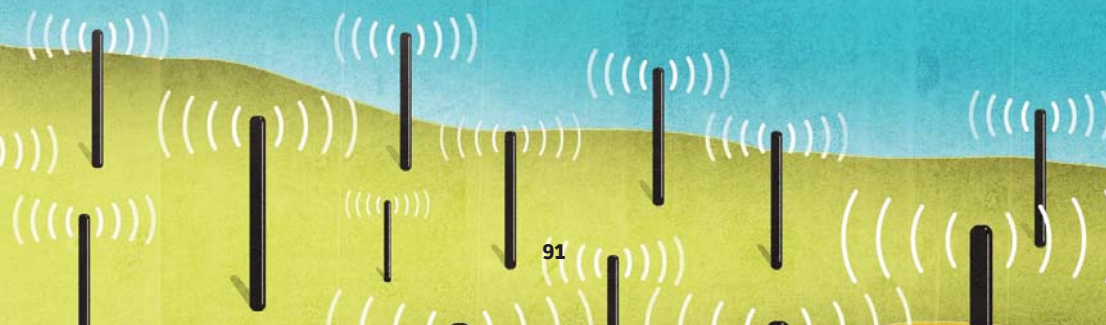
In late 2013 the Wi-Fi Alliance announced its 802.11ad certification brand: The group will stamp interoperable 802.11ad products as "WiGig Certified" (go.pcworld.com/wigig) when the certification program begins in 2015.

The IEEE 802.11ah standard, meanwhile, resides at the opposite end of the spectrum. Operating in the unlicensed 900MHz frequency band, a wireless network based on 802.11ah would easily penetrate walls, but it wouldn't deliver much bandwidth—only 100 kbps to 40 mbps. Such technology might be useful for sensors and probes in connected homes or commercial buildings; 802.11ah could be considered a competitor to the Z-Wave and ZigBee protocols in the "Internet of Things" arena, too. The IEEE isn't expected to ratify this standard until January 2016.

Operating in the 900MHz band, a network based on 802.11ah would easily penetrate walls.

Wi-Fi for every need

Look past all the alphabet soup, and you'll see that the future of Wi-Fi centers on the evolution of standards that can meet the demands of new generations of wirelessly connected devices. When those new generations include everything from enterprise printers to egg timers, you can bet we'll need all of the flavors of Wi-Fi that are coming down the pike.



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One dream.
Singers and Scientists share more than might be expected. Whether it's a breakout melody or a breakthrough in research. When it comes together, everything fits. It can change lives forever. Stand Up To Cancer supports the collaboration, innovation and research that are turning discoveries into viable treatments and possibly, one day, a cure.
Stand up with us. Let your voice make a difference because when we work together, nothing is impossible.
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YOU DON'T KNOW DOCS FROM DRIVE

GOOGLE'S PRODUCTIVITY APPS EXPLAINED

BY CHRISTOPHER NULL

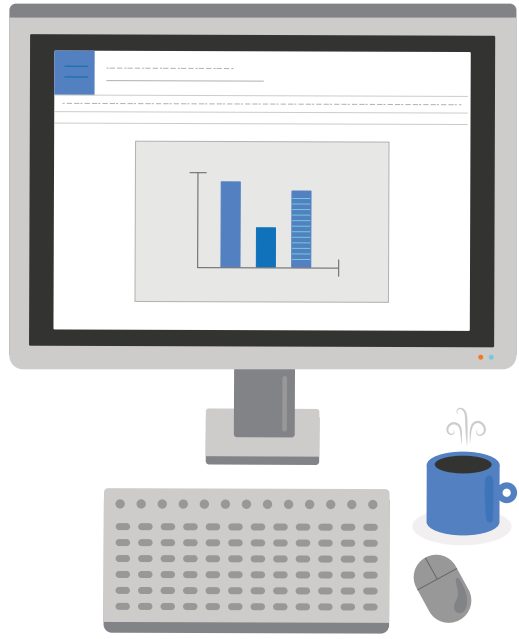
ILLUSTRATION BY SHAW NIELSEN · ANIMATION BY JOHN UELAND

GOOGLE'S RECENT UPGRADES to Drive have made clear that the company is going head-to-head with Microsoft on productivity services. Unfortunately, in its efforts to emulate the industry standard, Google has made its cloud-based apps every bit as Byzantine as Office 365.

Google's services overlap and their names aren't self-explanatory. This problem is aggravated by the company's propensity to change those names, consolidate services under one moniker, or simply discontinue them.

Fortunately, underneath the confusing nomenclature you'll find that Google is currently offering three major productivity services to the public. (Though the company's master list of products includes dozens of additional offerings, this story doesn't focus on non-productivity-related business services like Google AdWords, Google Analytics, Google Payments, and so on.) Here's an analysis of each to help you decide whether one (or more) is right for you.

GOOGLE DRIVE

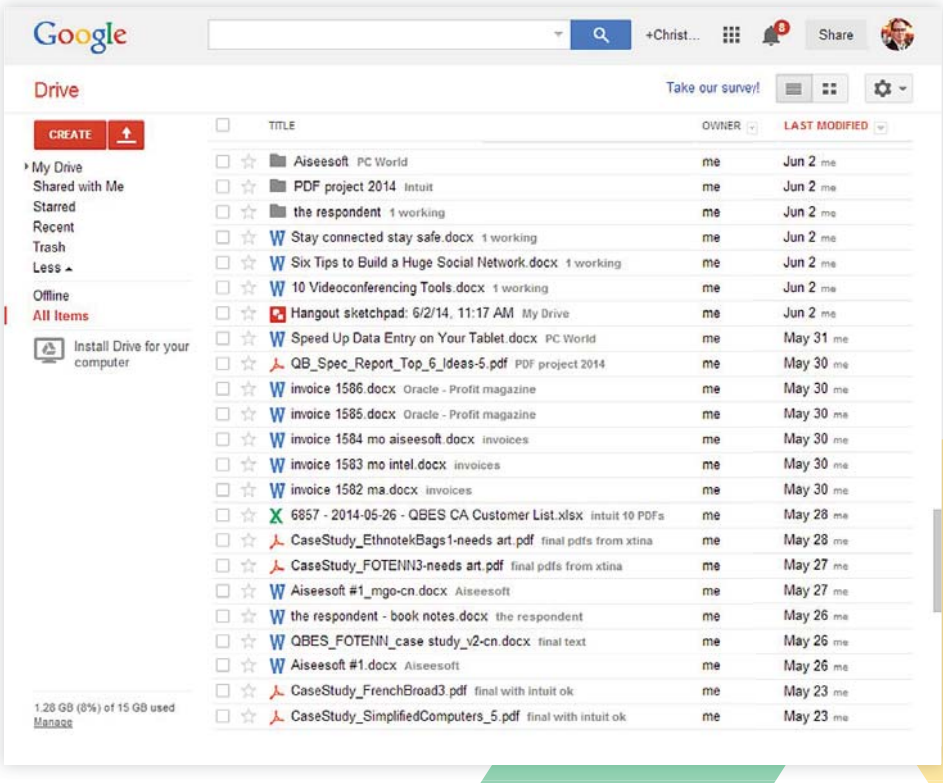


Google Drive is an individual-level tool and probably the best-known of these services. At its heart it's an online storage system for everyone.

You can store most anything on Google Drive (plug-ins let you work directly on Google Drive through Windows and other operating systems), but the real productivity benefit comes when you use Google's business apps, which are integrated directly into Google Drive. These apps include standard business tools: a word processor (Google Docs), a spreadsheet (Google Sheets), and a presentation tool (Google Slides). You can create documents with these tools from within Google Drive. You can also upload documents from a device, convert them to the relevant Google format, and continue to edit them online.

Naming confusion

You can store just about anything on Google Drive (plug-ins let you work directly on Google Drive through Windows and other operating systems), but the real productivity benefit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Google Drive by any other name...

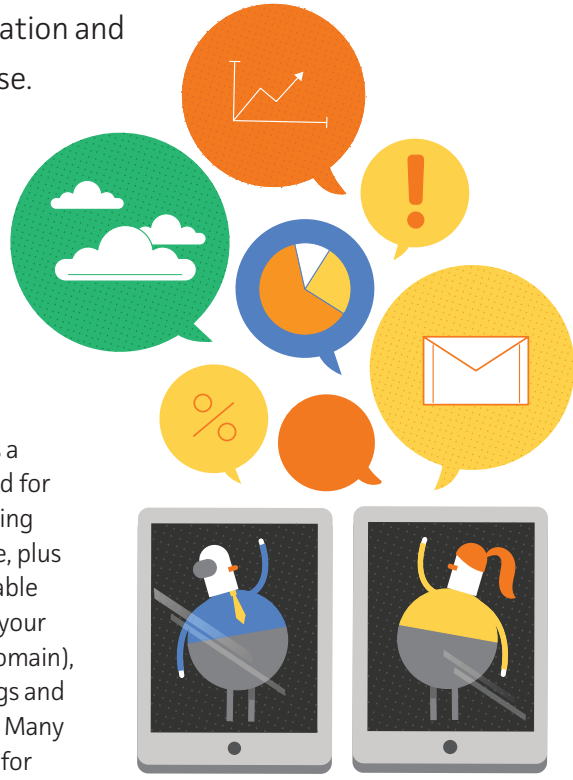
comes when you use Google's business apps, which are integrated directly into Google Drive. Primarily, this set of apps includes the trinity of standard business tools: a word processor (Google Docs), a spreadsheet (Google Sheets), and a presentation tool (Google Slides). You can create documents with these tools directly from within Google Drive. You can also upload documents from a device, convert them to the relevant Google format, and continue to edit them online.

Google Drive competes with Microsoft OneDrive (go.pcworld.com/aboutonedrive), which also lets you store all manner of files, as well as create and edit files, for free. OneDrive gives you 15GB of space for signing up.

GOOGLE APPS FOR BUSINESS

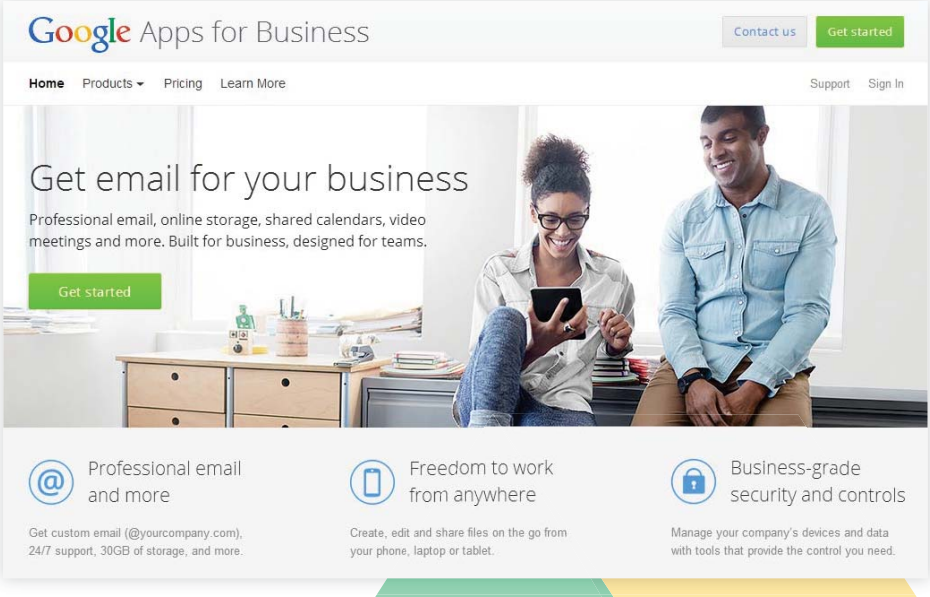
The name Google Apps for Business implies that there is a Google Apps Not for Business, but other than offerings for Education and Government, this isn't the case.

Part of the confusion stems from a prior product called Google Apps Standard, a free and stripped-down version of Google Apps for Business. Google discontinued this in 2012 because, it said, users outgrew the service too quickly.



Emphasis on groups

Google Apps for Business comprises a sprawling set of services (customized for use in groups) that includes everything described above under Google Drive, plus some additional features. Most notable among them is the ability to set up your own email system (with your own domain), shared calendars, and video meetings and presentations via Google Hangouts. Many companies that adopt Google Apps for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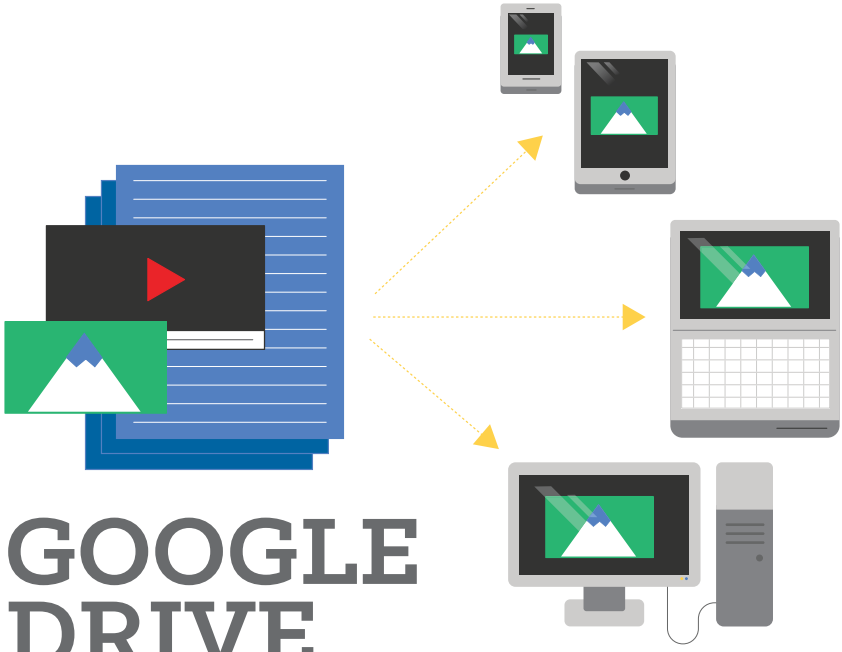
Get started
Professional email and more
Get custom email (@yourcompany.com), 24/7 support, 30GB of storage, and more.
Freedom to work from anywhere
Create, edit and share files on the go from your phone, laptop or tablet.
Business-grade security and controls
Manage your company's devices and data with tools that provide the control you need.

Business use it heavily for the email features, while the ability to collaborate on document creation and editing is almost an afterthought.

Subscribers can manage Google Apps for Business through a central tool, called Google Admin, where you add and delete approved users and devices and perform other basic maintenance chores.

Google Apps for Business is pretty inexpensive: $5 per user per month, or $50 per user per year. Google Apps for Business users get 30GB of total storage space each, double the free Google Drive limit, but if that's not enough, there's now…

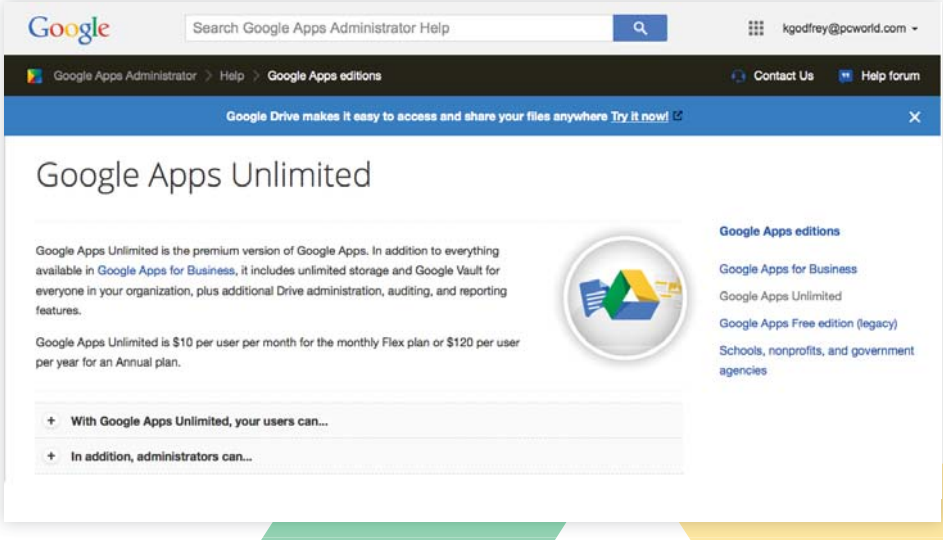
Google Apps for Business customizes Google's productivity tools for groups.



GOOGLE DRIVE FOR WORK

The latest addition to the Google Drive/Apps family is Google Drive for Work, which mostly amounts to an expansion of storage space for customers of Google Apps for Business.

The heart of this offering is unlimited storage. For $10 per user per month (or $100 per user per year), Google lifts the 30GB per user cap. For companies with five or more paid users, there are no limits on the amount of storage space each user can occupy, but if you have fewer than five, the cap remains at a spacious 1TB per user.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Google Apps Unlimited
Google Apps Unlimited is the premium version of Google Apps. In addition to everything available in Google Apps for Business, it includes unlimited storage and Google Vault for everyone in your organization, plus additional Drive administration, auditing, and reporting features.
Google Apps Unlimited is $10 per user per month for the monthly Flex plan or $120 per user per year for an Annual plan.
Google Apps editions
Google Apps for Business
Google Apps Unlimited
Google Apps Free edition (legacy)
Schools, nonprofits, and government agencies
With Google Apps Unlimited, your users can...
In addition, administrators can...

Enhanced security

Google Drive for Work is being folded directly into Google Apps for Business as a premium option, so don't be surprised if the name doesn't stick around. In fact, just a week after launch the service already had an alternate name—Google Apps Unlimited (go.pcworld.com/gaunlimited). You don't need to sign up for a separate service if you want to use it; it's available as an option on the Google Apps for Business pricing page (go.pcworld.com/gabprice) during signup. (Existing Google Apps for Business users can also upgrade to the new plan.)

In addition to the expanded storage feature, Google Drive for Work also adds improved security and manageability, such as the power to decide whether users can install the Google Drive Windows client on an individual basis. Google Drive for Work also includes a component called Google Vault (go.pcworld.com/vault)—aka Google Apps Vault—which lets you archive your company's email and Web chat content for the amount of time that you set. This alone could be essential for certain businesses where data retention rules must be followed.

Google Drive for Work has already been renamed as Google Apps Unlimited.

GOING FORWARD

Once you get a handle on Google's erratic naming scheme, understanding the differences among these offerings ultimately isn't too tough. One thing's for sure, though: This will all change again, and sooner than we all think.

SERVICE	TARGET MARKET	COST	STORAGE SPACE INCLUDED	UPGRADES	KEY FEATURES
Google Drive	Individuals	Free	15GB	100GB ($2 per month) to 30TB ($300 per month)	Cloud storage, productivity apps
Google Apps for Business	Business Users	$5 per user per month or $50 per user per year	30GB per user	Can uppgrade to Google Drive for Work	Cloud storage, productivity apps, custom domain email, calendar, video chats
Google Drive for Work	Business Users	$10 per user per month or $100 per user per year	Unlimited (1TB per user if under five users	None	Everything in Google Apps for Business plus expanded storage, additional security, data archiving

You might know **Joshua**.
He loves video games, and he owns enough to know they're not all meant for kids. That's why he reminds his friends (at least the ones that have kids) that they all have **big black letters on the box** to help parents find the ones that are best for their families.

You can learn about those ratings at **ESRB.org**

Los Angeles, CA

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EARLY CHILDHOOD EC · EVERYONE E · EVERYONE 10+ E10+ · TEEN T · MATURE 17+ M · ADULTS ONLY 18+ AO

HERE'S HOW

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15 hidden Windows tools and tricks

These valuable but often overlooked tips can streamline your workflow.

BY BRAD CHACOS

Delve into Windows' hidden abilities

Windows is so deep and flexible that many of us don't utilize its more powerful tools, whether from unawareness or forgetfulness. But a universe of tools and tricks lies within Internet Explorer, the Start button, and elsewhere. We'll refresh your memory with some classic Windows power tips.

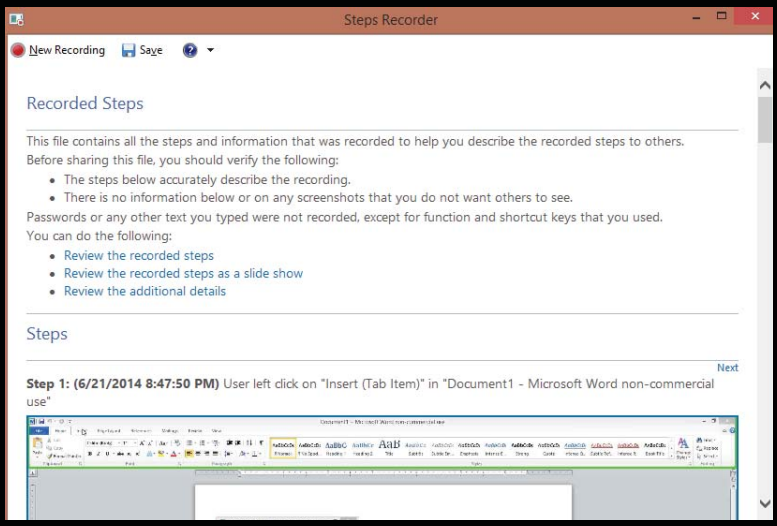
GodMode 1/15

The GodMode developer tool collates the operating system's far-flung customization options into a single location. Important warning: Windows Vista users should not use GodMode, as it may immediately render the system unstable.

Right-click the Windows desktop and select *New → Folder.* Name the folder ***GodMode*.{ED7BA470-8E54-465E-825C-99712043E01C}** — you can replace "GodMode" with any other name, but you must enter the period and what follows exactly. The folder icon will switch to the Control Panel icon. Dive into our tutorial for deeper GodMode tricks (go.pcworld.com/godmode).

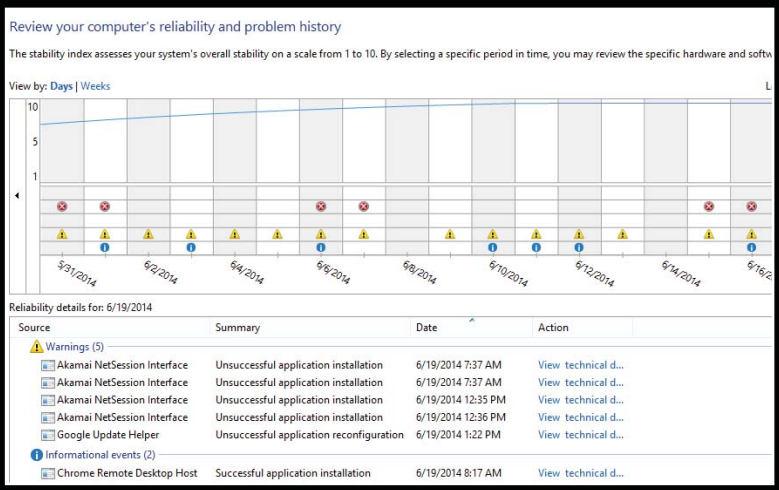
CONTINUED:

15 hidden Windows tools and tricks


Steps Recorder
New Recording
Save
Recorded Steps
This file contains all the steps and information that was recorded to help you describe the recorded steps to others.
Before sharing this file, you should verify the following:
The steps below accurately describe the recording.
There is no information below or on any screenshots that you do not want others to see.
Passwords or any other text you typed were not recorded, except for function and shortcut keys that you used.
You can do the following:
Review the recorded steps
Review the recorded steps as a slide show
Review the additional details
Steps
Next
Step 1: (6/21/2014 8:47:50 PM) User left click on "Insert (Tab Item)" in "Document1 - Microsoft Word non-commercial use"

Problem Steps Recorder 2/15

This tool creates an HTML slideshow of your actions so you can show your IT admin or resident PC geek exactly how you ran into a problem. To open Problem Steps Recorder, search for **psr** in the Windows 7 Start menu or Windows 8 Start screen.



Windows Reliability Monitor 3/15

Windows Reliability Monitor shows all the problems Windows has encountered in a chronological chart, which you can sort and click through. The tool is especially handy for tracking down programs that may be causing weird crashes.

To open Reliability Monitor, open the Control Panel and head to *System and Security.* Choose *Review your computer's status and resolve issues* (under Action Center). Then go to *Maintenance → View reliability history* (under "Check for solutions to problem reports").

CONTINUED:

15 hidden Windows tools and tricks

Get a power efficiency report 4/15

Windows can give you a detailed report on your laptop's power efficiency. Search for **Command Prompt** via the Start menu (Windows 7) or Start screen (Windows 8). Then right-click the *Command Prompt* result and select *Run as administrator.* Enter **powercfg -energy -output *Folder*Energy_Report.html** in the Command Prompt, replacing "Folder" with the file path to your chosen folder for the report.

Windows will analyze things for a while, and then spit out a browser-readable Energy Report, offering suggestions for optimizing power performance.

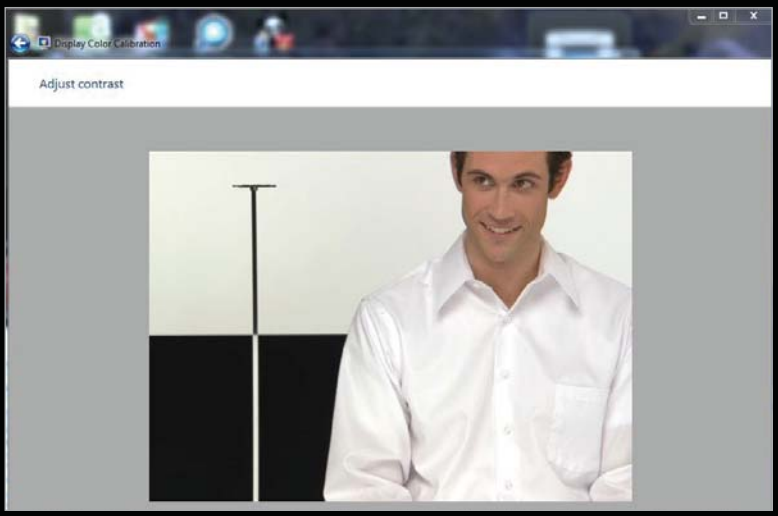
Encrypt your files 5/15

Keep your files safe even if someone hacks or steals your PC. Microsoft's BitLocker—built into Windows Vista or 7 Ultimate, Windows Vista or 7 Enterprise, and Windows 8 Pro or Enterprise—can encrypt an entire drive.

BitLocker has some special hardware requirements and caveats—most notably, you don't want to lose the recovery key that lets you decrypt all your data. Check out our beginner's guide to BitLocker (go.pcworld.com/bitlock).

CONTINUED:

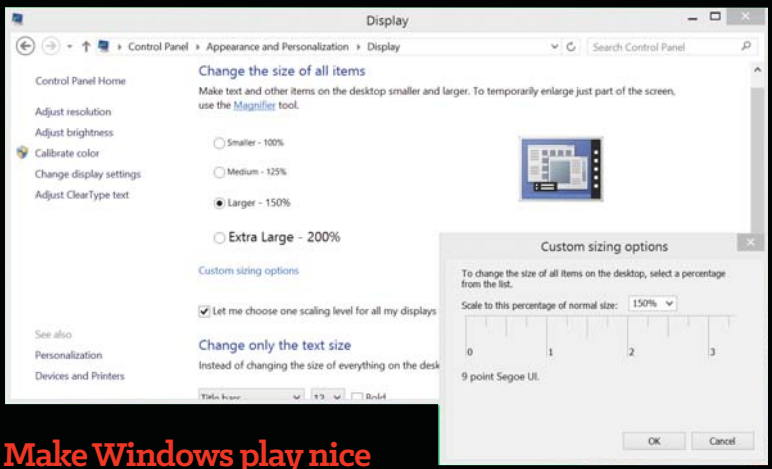
15 hidden Windows tools and tricks



Calibrate the display 6/15

Third-party display calibration software can cost an arm and a leg. Fortunately, Windows includes a calibration tool, tucked into a corner of the Control Panel.

From the Control Panel, select *Display* and choose the *Calibrate color* option in the left pane. Find details on using the tool in our guide (go.pcworld.com/calibtool).


Display
Control Panel › Appearance and Personalization › Display
Search Control Panel
Control Panel Home
Adjust resolution
Adjust brightness
Calibrate color
Change display settings
Adjust ClearType text
Change the size of all items
Make text and other items on the desktop smaller and larger. To temporarily enlarge just part of the screen, use the Magnifier tool.
Smaller - 100%
Medium - 125%
Larger - 150%
Extra Large - 200%
Custom sizing options
Let me choose one scaling level for all my displays
See also
Personalization
Devices and Printers
Change only the text size
Instead of changing the size of everything on the desk
Custom sizing options
To change the size of all items on the desktop, select a percentage from the list.
Scale to this percentage of normal size:
150%
0
1
2
3
9 point Segoe UI.
OK
Cancel

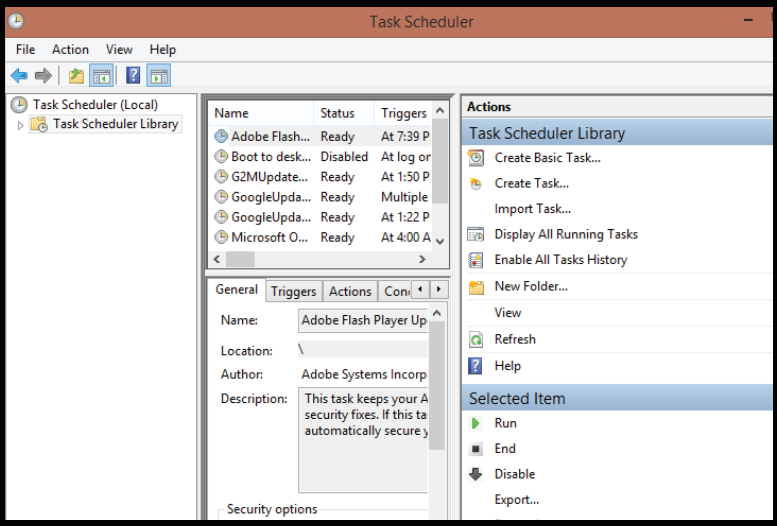
Make Windows play nice with high-DPI displays 7/15

Super-high-resolution displays are becoming the norm these days. Unfortunately, Windows still suffers from scaling issues with pixel-packed displays, often making text appear small or blurry. To fix this, try tinkering with Windows' global scaling options.

Open the Control Panel and head to *Display → Custom Sizing Options*. You can change scaling by a percentage or via a ruler tool. The Display page also offers scaling options for text alone.

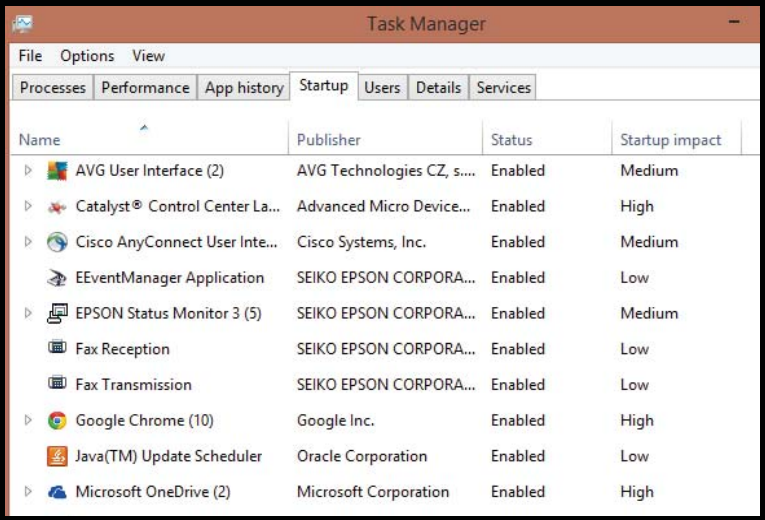
CONTINUED:

15 hidden Windows tools and tricks



Schedule digital tasks 8/15

Task Scheduler helps you set schedules for running Windows tasks such as backups, as well as create complex task scripts that run at specific times. Search for *Task Scheduler* via the Start menu or Windows 8 Start screen, and then select the *Schedule tasks* option. To create basic tasks, explore the Check Disk and Disk Cleanup sections of our task automation guide (go.pcworld.com/taskauto). For more advanced tasks, see our how-to (go.pcworld.com/tasksched).


Task Manager
File Options View
Processes Performance App history Startup Users Details Services
Name Publisher Status Startup impact
AVG User Interface (2) AVG Technologies CZ, s.... Enabled Medium
Catalyst® Control Center La... Advanced Micro Device... Enabled High
Cisco AnyConnect User Inte... Cisco Systems, Inc. Enabled Medium
EEventManager Application SEIKO EPSON CORPORA... Enabled Low
EPSON Status Monitor 3 (5) SEIKO EPSON CORPORA... Enabled Medium
Fax Reception SEIKO EPSON CORPORA... Enabled Low
Fax Transmission SEIKO EPSON CORPORA... Enabled Low
Google Chrome (10) Google Inc. Enabled High
Java(TM) Update Scheduler Oracle Corporation Enabled Low
Microsoft OneDrive (2) Microsoft Corporation Enabled High

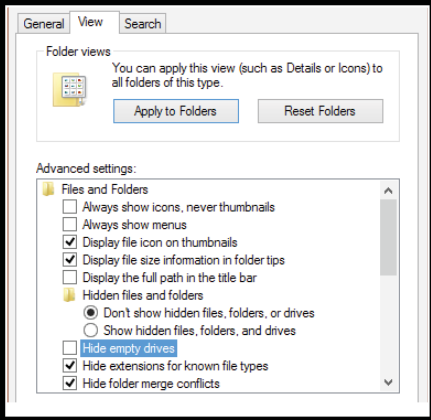
Tweak the programs that start at boot 9/15

Many programs run at startup by default, slowing down the boot process. Windows includes tools for manually selecting which programs start up alongside the operating system. Windows 8 offers the Startup tab in Task Manager (previous versions of the OS make you jump through more hoops). Press <Windows>-R to bring up the Run command, and then search for **msconfig** and open the *Startup* tab. You can eliminate common offenders such as Steam or iTunes.

CONTINUED:

15 hidden Windows tools and tricks

Force Windows to show all your drives 10/15


General
View
Search
Folder views
You can apply this view (such as Details or Icons) to all folders of this type.
Apply to Folders
Reset Folders
Advanced settings:
Files and Folders
Always show icons, never thumbnails
Always show menus
Display file icon on thumbnails
Display file size information in folder tips
Display the full path in the title bar
Hidden files and folders
Don't show hidden files, folders, or drives
Show hidden files, folders, and drives
Hide empty drives
Hide extensions for known file types
Hide folder merge conflicts

By default, Windows' File Explorer won't show empty drives, which can be a hassle when you're fiddling with SD cards or flash drives. But you can force the issue.

Open File Explorer. In Windows 7, press <Alt> to bring up the top menu, and then head to *Tools* → *Folder Options* → *View*. Under Advanced Settings, uncheck the box next to *Hide empty drives* and click *OK*. In Windows 8, open File Explorer's View tab and open *Options* → *Change folder and search options*. Look for the same *Hide empty drives* option. You can also opt to show hidden files and folders.

Handy hotkeys 11/15

Here are a few shortcut gems (see go.pcworld.com/kslist for more).

<Windows>–left- or right-arrow key to pin the current window to the left or right screen edge, respectively

<Windows>-M to minimize all desktop windows

<Windows>-R to open the Run command

<Windows>-X to open Windows 8's Quick Access Menu

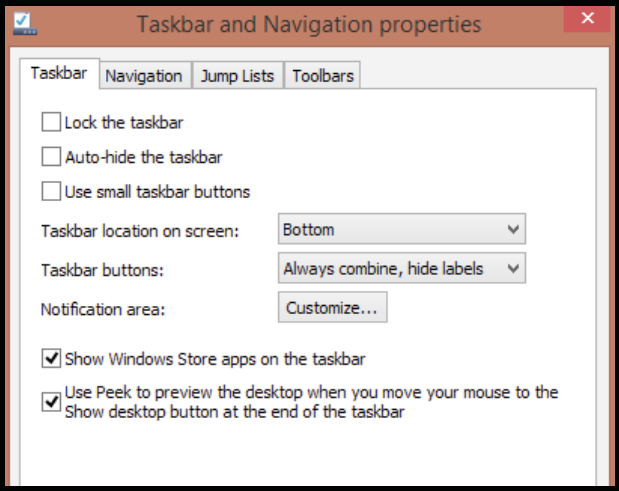
<Alt>-<Tab> to switch between open programs

CONTINUED:

15 hidden Windows tools and tricks

Put windows in your Windows 12/15

Virtual machines, which allow you to run sandboxed instances of operating systems in a standard window in Windows, are useful when you need a separate OS for software security, compatibility, or testing purposes. The Pro and Enterprise versions of Windows 8 support Microsoft's Hyper-V virtual machine manager. To install it, from the Control Panel, head to *Programs* → *Turn Windows Features on or off,* and then check the *Hyper-V* box and click *OK*. Reboot after installation.



Tailor your taskbar 13/15

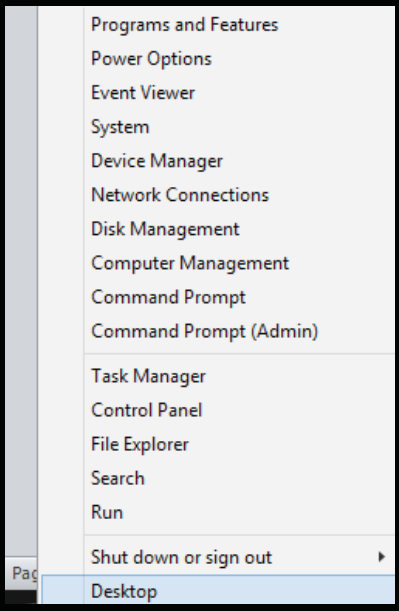
The Windows taskbar offers a wealth of customization options for power users. Right-click on it and select Properties. You can adjust the taskbar's position, auto-hide it, add toolbars, and more. See our "Hassle-Free PC" column on the subject (go.pcworld.com/taskbar).

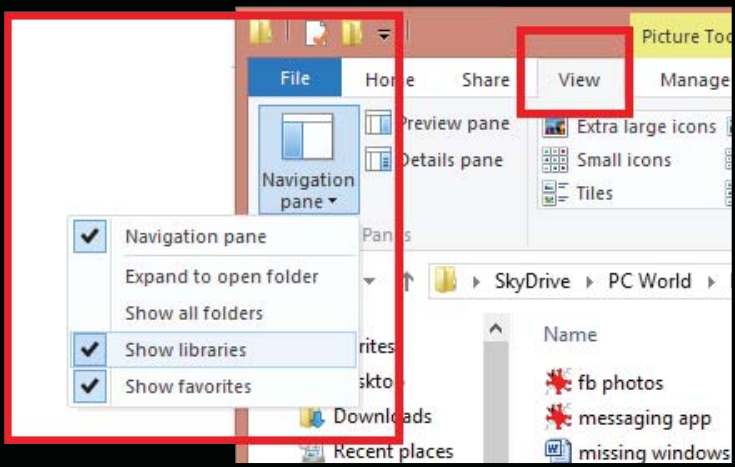
CONTINUED:

15 hidden Windows tools and tricks

Windows 8's Quick Access menu 14/15

Windows 8 may have killed the Start menu, but it didn't leave power users completely stranded: Right-click the lower-left corner of the operating system screen for the Quick Access menu, which provides a slew of helpful power tools.





Restore lost options to Windows 8 15/15

Windows 8 and 8.1 removed some helpful legacy desktop options—most notably the Start menu and, in Windows 8.1, Library quick links for File Explorer (learn more at go.pcworld.com/81out).

Microsoft plans to revive the Start menu (go.pcworld.com/startback), but for now, you'll have to resort to a third-party tool (go.pcworld.com/toolstart). Restoring Libraries to Windows 8.1 is easier. Just open File Explorer, head to *View* → *Navigation pane,* and select *Show libraries.*

How to upgrade an old PC: No-brainer improvements

BY CHRIS HOFFMAN

STARTUP PROGRAMS, JUNK files, and even clumps of dust weigh down your PC, making it slow down over time. Give your PC's software and hardware a quick tune-up, and it should run just as it did the day you bought it. Inexpensive hardware upgrades can even make it faster than it was brand-new (go.pcworld.com/hwup).

Software tune-ups

1. Disable or remove unwanted startup programs

Many programs install system tray utilities or services that piggyback on your system's startup routine, slowing boot time and wasting RAM.

ILLUSTRATION BY DALE EDWIN MURRAY

In Windows 8, right-click your taskbar, select *Task Manager,* click *More details,* and, in the *Startup* tab, disable programs you don't need.

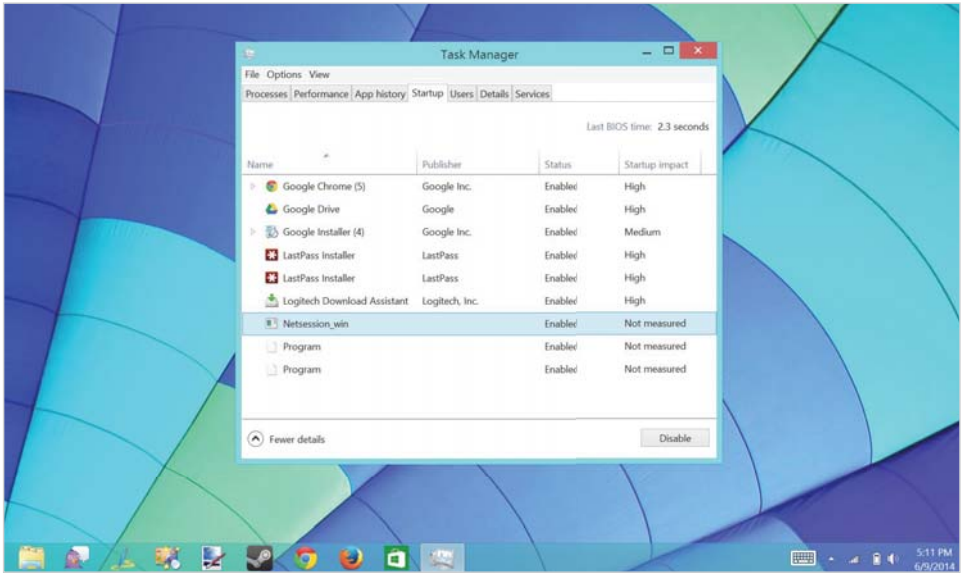
In Windows 7, use the Startup Manager in CCleaner to change which programs start up when the system boots (go.pcworld.com/cclean). In CCleaner, navigate to *Tools > Startup.*

2. Clean up unnecessary system files

Use a tool such as CCleaner or Disk Cleanup (go.pcworld.com/diskclean), included in Windows, to clear out system files you don't need. They take up space and can slow down your PC.

To open the Disk Cleanup program on Windows, tap the <Windows> key to get to the Start menu or Start screen. Type **`Disk Cleanup`**, and click the *Free up disk space by deleting unnecessary files* shortcut in Windows 8 or the *Disk Cleanup* shortcut in Windows 7.

CCleaner can clean up even more types of temporary files. You may want to tweak its settings first, as it will erase your browser history, cookies, cache, and other data you may want to keep.

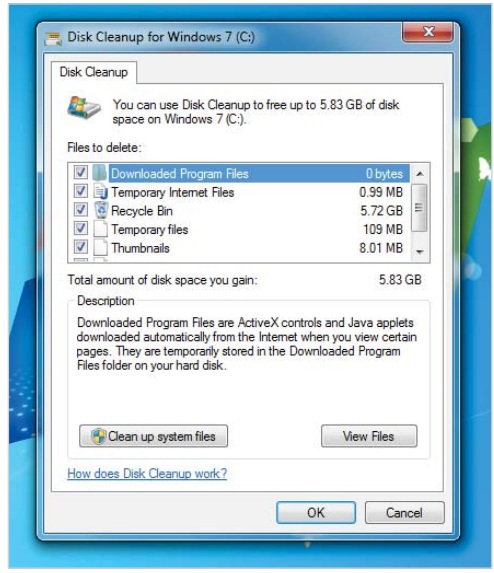


Use the Windows 8 Task Manager to turn off programs that start up automatically.

3. Defragment and optimize your hard drives

Modern versions of Windows defragment drives in the background, so it's probably not necessary to do so manually (go.pcworld.com/defragging). Still, it doesn't hurt.

Tap the <Windows> key to open the Start menu or Start screen, type **`Defragment`**, and launch Disk Defragmenter in Windows 7 or the *Defragment and optimize your drives* tool in Windows 8. The tool will analyze your drives and determine whether you need to defragment them. Note that Windows 7's Disk Defragmenter should refuse to defragment solid-state drives, while Windows 8 has renamed Disk Defragmenter "Optimize Drives" because it can also optimize solid-state drives (go.pcworld.com/defragssd).

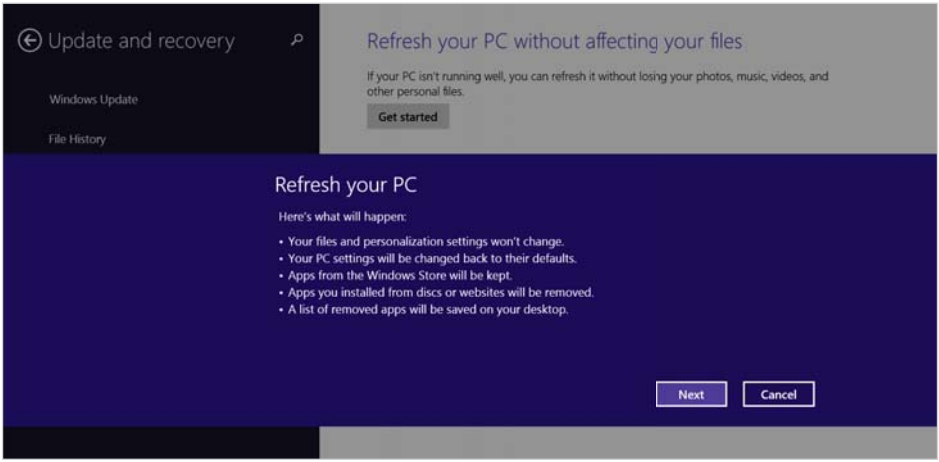

Disk Cleanup for Windows 7 (C:)
Disk Cleanup
You can use Disk Cleanup to free up to 5.83 GB of disk space on Windows 7 (C:).
Files to delete:
Downloaded Program Files 0 bytes
Temporary Internet Files 0.99 MB
Recycle Bin 5.72 GB
Temporary files 109 MB
Thumbnails 8.01 MB
Total amount of disk space you gain: 5.83 GB
Description
Downloaded Program Files are ActiveX controls and Java applets downloaded automatically from the Internet when you view certain pages. They are temporarily stored in the Downloaded Program Files folder on your hard disk.
Clean up system files
View Files
How does Disk Cleanup work?
OK
Cancel

The Windows 7 Disk Cleanup utility can free up space.

4. Keep your system free of viruses and malware

Even if you're using antivirus software and otherwise playing it safe, new breeds of malware can sneak onto your system. The nuclear option is to reinstall Windows entirely. On Windows 8, you can use the Refresh feature (go.pcworld.com/fresh), which retains your personal files, but gives you a fresh desktop system. You'll have to reinstall your desktop software.

On Windows 7, you can use your manufacturer's recovery partition (go.pcworld.com/partition) or reinstall Windows 7 from an installation disc. Whichever path you take, you'll need to clean up bloatware afterward (go.pcworld.com/bloatware).


Update and recovery
Windows Update
File History
Refresh your PC without affecting your files
If your PC isn't running well, you can refresh it without losing your photos, music, videos, and other personal files.
Get started
Refresh your PC
Here's what will happen:
• Your files and personalization settings won't change.
• Your PC settings will be changed back to their defaults.
• Apps from the Windows Store will be kept.
• Apps you installed from discs or websites will be removed.
• A list of removed apps will be saved on your desktop.
Next
Cancel

The Windows 8 Refresh PC utility reinstalls Windows 8 and wipes out all program files, but leaves your personal files intact.

5. Upgrade to a newer operating system

If you have an old Windows XP PC, you can try installing a lightweight Linux system on it to give it a new lease on life (go.pcworld.com/linuxalt).

You can speed up an old computer that came with Windows Vista by updating it to Windows 8.1 or even Windows 7, but you're probably better off putting the money for a new Windows license toward newer, faster hardware.

Hardware cleaning

If your PC can't cool itself efficiently, it may throttle down your CPU or graphics hardware. Excessive heat can damage hardware over time or cause it to unexpectedly shut down. When you hear the internal fans whirring at maximum speed during light or moderate usage, your system may be overheating.

1. Bust the dust

Give your PC's case a regular cleaning to prevent dust buildup (go.pcworld.com/bustdust). With the computer powered off and unplugged, open its case and spray with canned air to clean out the

dust clinging to fans and vents. You can try cleaning out your laptop's cooling fans (go.pcworld.com/fanclean), but opening up a laptop tends to be more difficult.

2. Replace the paste

A heat-dissipating thermal compound sits between both your CPU and GPU and their respective heatsinks, conducting heat from the heat-generating chip to the fan-cooled heatsink. This paste deteriorates over time, but you can replace it. Apply a thin, flat, uniform layer.

Hardware upgrades

If your PC is a decade old, you won't be able to speed it up much with hardware upgrades—and in that case you'd be better off buying a new PC. Keeping that in mind, the following upgrades offer the most bang for your buck (go.pcworld.com/buck).

1. Replace the drives

The hard disk is typically the major bottleneck in a PC. Solid-state drives are much faster than traditional magnetic hard drives, although they offer less storage space per dollar (go.pcworld.com/ssdspeed). You can get a 120GB SSD for $100, and a 2TB magnetic hard drive for about the same price.

If your PC is only a few years old, you can probably boost its speed with an SSD. You may even be able to upgrade your laptop with an SSD (go.pcworld.com/laptopssd.)

2. Upgrade random access memory (RAM)

The RAM holds your PC's working memory. If it has too little RAM, your PC has to constantly read and write to its hard drive, slowing everything down.

To install RAM, power off the PC, open it up, and snap in the new sticks (go.pcworld.com/pcram). Some laptops allow easy access to their RAM slots (go.pcworld.com/laptopram). Make sure you buy the correct type of RAM for your PC.

3. Upgrade the CPU or graphics card

If you're an avid gamer, you may want to upgrade your PC's graphics card (go.pcworld.com/gupgrade). Bear in mind that the performance bottleneck might actually be the CPU: If it isn't fast enough, upgrading the graphics card won't help much.

CPU upgrades are possible (go.pcworld.com/cupgrade), but Intel regularly introduces new socket formats, which means new CPUs may not fit in older motherboards. An Intel CPU won't work in a motherboard with an AMD CPU socket, and vice versa. If you need to upgrade the motherboard as well, you may want to consider investing in a new computer (go.pcworld.com/newpc).

Shortcuts rev up the taskbar

ONE OF THE best features of Windows 7 and Windows 8.1 is the ability to pin apps to the taskbar. Until Microsoft comes out with the refreshed Start menu, pinning apps is a must-have feature for Windows 8.1 users (go.pcworld.com/startback).

As the go-to location for dealing with and switching between open programs, the taskbar may be the most-clicked location on your desktop. But you can use a few keyboard tricks to make things even more efficient.

Pick by number

If you have a bunch of apps pinned to the taskbar, the keyboard offers a quick way to fire up or switch to one of those programs without reaching

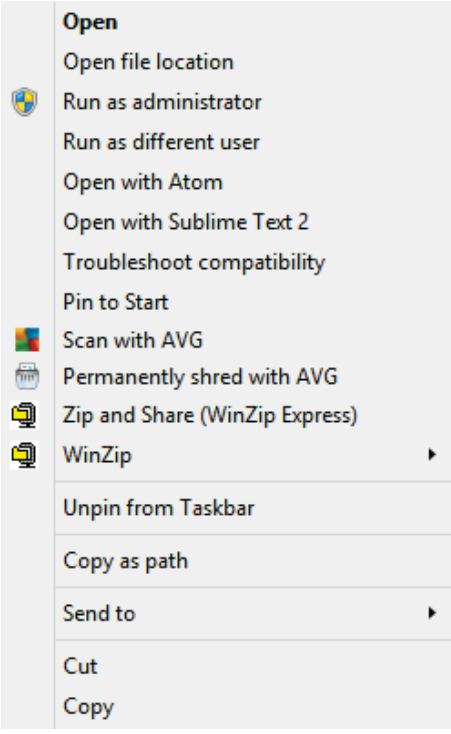
ILLUSTRATION BY DALE EDWIN MURRAY

for your mouse. Press the <Windows> key plus the app's position number (on Windows 8.1, the numbering starts from the left after the Windows icon—File Explorer is 1 in the example shown here). Let's say you want to open Atom, GitHub's new text editor, in the taskbar, and it's in the fifth position from the left. Press <Windows>-4.

A few keyboard tricks can make your taskbar even more efficient.

If a program is open, it immediately becomes the active window. If it's closed, the app starts up.

This shortcut works with any app that currently appears on the taskbar, including those that aren't pinned. The downside is that it works only with the first ten apps and it doesn't work with double digits—the tenth app is 0.



Systemic approach

Microsoft's jump lists, which give you program-specific contextual menus when you right-click an app, are great. For systemwide options, press <Shift> and then right-click. If the program is open, you'll only see options to adjust or move the window. Closed apps, however, offer a much larger set of choices.

When you press <Shift> and right-click a closed app, the contextual menu offers an abundance of options.

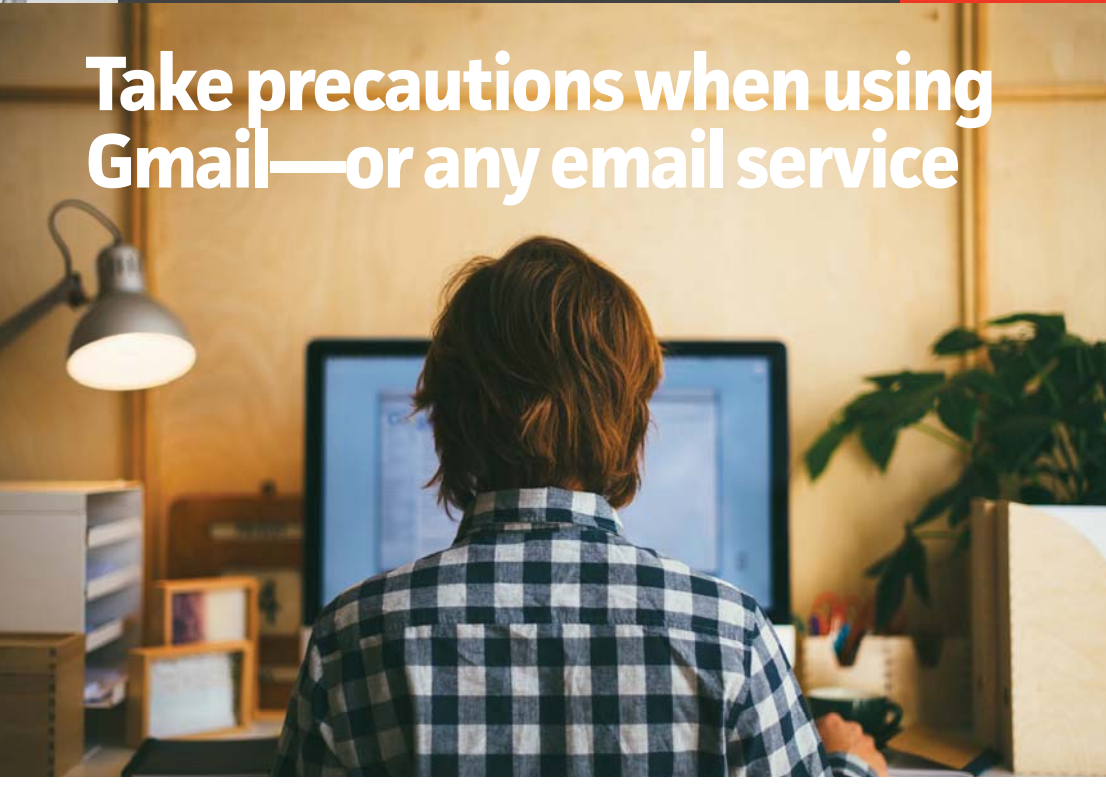
Spotlight

If you need access to more than ten apps, try <Windows>-T, which lets you quickly cycle through every app on your taskbar, whether it's open or closed. A small spotlight appears below the currently selected app's icon.

When you've landed on the program you want, just release the keys and press <Enter> to either open the app or make it the active window.

Each app has a position number that you can use in a shortcut.

Take precautions when using Gmail—or any email service



PHOTOGRAPHY BY ONDINE COREWIJN/STOCKSY

Q: **IS GMAIL** entirely safe and secure to use? If it isn't, how can I make it safer for myself?

—G. Jitchaku

A: That's a very broad question, so I'm offering a very broad answer. Nothing in this world—especially if it's stored in the cloud—is ever entirely safe. If you use Gmail, someone other than the intended recipient could read your mail, or your account might get hijacked. And that's the case with every email service. Whether you use Gmail, Outlook, or your ISP's email service, you need to protect yourself.

Email is an open book by its nature. Your messages pass through multiple servers between your computer and your recipients'. Most likely no one will read them—but you have to assume that someone might.

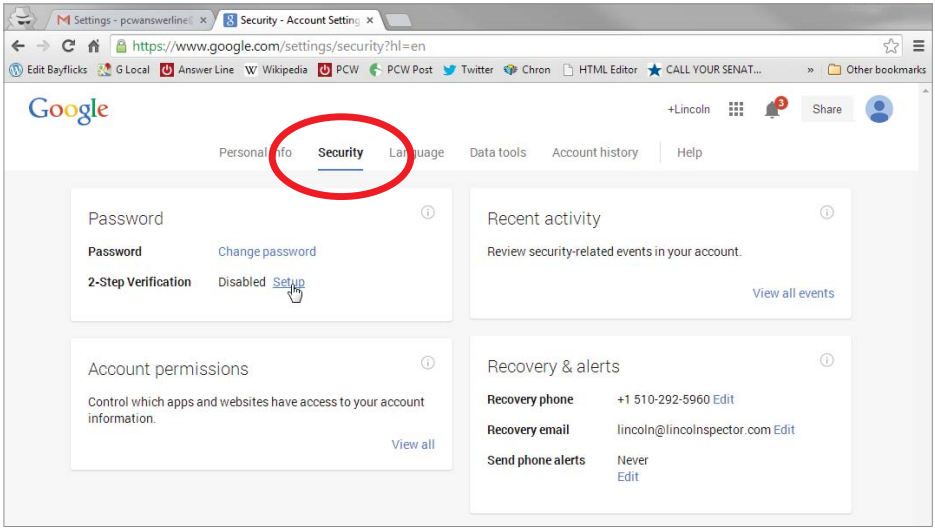
Gmail encrypts your mail with SSL between your computer and Google's network. But if the recipient isn't using Gmail, that leaves the message's journey from Google to the recipient unprotected. Google is building a Chrome extension to address this issue (go.pcworld.com/encryptchrome).

Potential leaks lurk in the email security formula as well. Google has its own financial reasons for reading your mail. Every company has disgruntled and dishonest employees. And, as Heartbleed proved, SSL isn't perfect (go.pcworld.com/heartbleed).

I've discussed Gmail privacy issues previously (go.pcworld.com/gmailpriv), so let's talk about protecting your account from hackers.

First, use a strong password. It should be long, complex, and impossible to guess but easy to remember, and you shouldn't use it for anything except your email service. If you don't have a password manager already, get one (go.pcworld.com/pwmanager).

Second, set up two-step verification. With this feature on, if someone logs in to your account on a PC you haven't personally authorized, Google will send a code to your cellphone via text



Protect your account with two-step verification.

message. You—or whoever is masquerading as you—must enter that code to access the account.

Here's how to set up Gmail's two-step verification:

1. Click the *Tool* icon (it looks like a gear) near the upper-right corner of the window and select *Settings*.

2. Click the *Accounts and Import* tab, and then the *Other Google Account settings* link.

3. On the Settings page, click the *Security* tab. Then, in the Password box, click *Setup* next to 2-Step Verification.

Always log off when you're done. You never know who will sit down next.

4. Follow the prompts. Click the *Send code* button and wait for a text from Google.

5. When the text arrives, enter the code in the appropriate field. If you're doing this on your own computer, you can leave *Trust this computer* checked. Obviously, you should uncheck that option on a public computer at a library or on campus.

That brings up another important point: When you access email on someone else's computer, always log off when you're done. You never know who will sit down after you leave.

Send your questions to answer@pcworld.com.

Tech Spotlight

A video showcase of the latest trends

Watch the video at go.pcworld.com/zbox760

Zbox EN760 Plus: Petite but great at gaming

» Don't let the size of Zotac's tiny PC fool you. The EN760 Plus (go.pcworld.com/en760) has the graphics horsepower to play even the most demanding games. It costs less than a tower PC and can fit almost anywhere—including the back of your monitor or HDTV. You'll need to provide your own keyboard, mouse, and operating system though, as these are not included.